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MALNUTRITION AND HEALTH EDUCATION[1]

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The Measurement of the Children

Sam stepped on the scales and registered a weight of 62 pounds. He was 53 inches tall. Acording to norms established by the investigations of Burk, Boas, etc., he should have weighed approximately 69 pounds. He was seven pounds underweight; that is, he was over 10% lighter than he should have been when compared with the average boy of his height. Another Sam, stepping on the scales, registered 118 pounds. He was 58 inches tall and, according to the normal standards, should have weighed not more than 85 pounds. He was 33 pounds, that is, more than 38% overweight.

In this way 894 children had their percentage of overweight or underweight established. The distribution of 800 children is shown in Table I. The first column gives the series of per-

[1] The Bureau of Educational Experiments secured the services of Dr. William R. P. Emerson in the organization and conduct of the experiment, results and conclusions from which are presented in this report. The "Nutrition Classes" were organized in P. S. 64, Manhattan, New York City, the Principal of which is Mr. Louis Marks. The first sessions were held in February, 1918, and were continued approximately four months. In carrying out the experiment, the Bureau had the cordial coöperation not only of the principal and his assistants and teachers, but also of Mr. John C. Gebhart of the School Lunch Committee, through which provision was made for the meals; of Miss C. I. MacColl of Christodora House where arrangements were made for the service of the meals and for rest rooms for the daily rest-periods. To each of these coöperating in the conduct of the experiment The Bureau of Educational Experiments wishes to express its appreciation.

centages, beginning with 67% overweight and then by steps of 5% and 2% until the average weight for height is reached. The latter group we have indicated as ranging from 1% overweight to 1% underweight. The series continues in steps of 2% and 5% for all the children underweight. In the succeeding columns of this Table is shown the distribution of the various grades and the total for the four grades considered. In the 7th grade there were 173 children; in the 6th, 245; in the 5th, 127; and in the 1st grade, 255—making a total of 800.

TABLE I

DISTRIBUTION OF CHILDREN ACCORDING TO PERCENTAGE OVER AND UNDER WEIGHT

Percentage	Grade VII.	Grade VI.	Grade V.	Grade I.	Total
67	...	...	...	1	1
44-49	1	...	1	...	2
39-44	...	...	...	...	...
34-39	2	1	...	...	3
29-34	...	1	...	1	2
24-29	...	4	...	...	4
19-24	3	2	...	1	6
17-19	1	...	2	...	3
15-17	4	2	1	1	8
13-15	3	8	3	2	16
11-13	7	5	3	2	17
9-11	3	8	4	6	21
7-9	14	9	7	13	43
5-7	8	11	9	24	52
3-5	17	19	11	24	71
+1-3	13	23	13	27	76
1-1	16	31	6	35	88
-1-3	23	28	13	24	88
3-5	22	24	16	29	91
5-7	11	30	11	22	74
7-9	8	12	10	14	44
9-11	6	10	4	13	33
11-13	7	6	5	11	29
13-15	3	2	2	...	7
15-17	1	5	1	3	10
17-19	...	4	3	2	9
19-24	...	...	...	...	...
24-29	...	...	1	...	1
29-34	...	...	1	...	1
Total	173	245	127	255	800

Table II shows a similar distribution for two special classes. That group designated as "Specials" included children who had been examined by a psychologist and rated as exceptionally bright children. There were 69 children included in this

group. The other special class was the "Open Air," which included 25 children.

TABLE II

DISTRIBUTION OF CHILDREN ACCORDING TO PERCENTAGE OVER AND UNDER WEIGHT

Percentage	Specials	Open Air
67	..	..
44-49	..	..
39-44	..	..
34-39	..	..
29-34	1	..
24-29	..	..
19-24	1	..
17-19	..	..
15-17	..	..
13-15	..	..
11-13	2	..
9-11	2	..
7- 9	1	1
5-7	2	2
3-5	12	..
+1-3	3	3
1-1	9	2
-1-3	8	1
3-5	3	4
5-7	6	5
7-9	11	1
9-11	2	2
11-13	2	2
13-15	2	..
15-17	2	1
17-19	..	..
19-24	..	1
24-29	..	..
29-34	..	..
	69	25

Which Children Are Undernourished. Clinical experience has led us to the conclusion that a child who is chronically 7% or more underweight might be considered an ill child. We have, therefore, divided the children into three groups. The first group includes all those children who are 7% or more overweight; the second, children from 7% overweight to 7% underweight; and the third group all children 7% or more underweight. Tables III and IV show the grouping for the regular grades and the special groups respectively. In the 7th grade more than 14% are underweight; in the 6th grade nearly 16%; in the 5th grade over 21%; and in the 1st grade nearly 17%. Considering these four grades as rep-

resentative of the entire school population, 16.8% of all our children are 7% or more under the weight which they should be for their height. This means that in New York City, with approximately 1,000,000 school children, 168,000 are undernourished.*

TABLE III

PERCENTAGE OF OVERWEIGHT AND UNDERWEIGHT CHILDREN

		Grade VII.	Grade VI.	Grade V.	Grade I.	Total
Children 7% or more overweight	Number.	38	40	21	27	126
	Per Cent.	22.0	16.3	16.5	10.6	15.8
From 7% overweight to 7% underweight	Number.	110	166	79	185	540
	Per Cent.	63.6	67.8	62.2	72.5	67.4
Children 7% or more underweight	Number.	25	39	27	43	134
	Per Cent.	14.4	15.9	21.3	16.9	16.8
Total	Number.	173	245	127	255	800
	Per Cent.	100.0	100.0	100.0	100.0	100.0

The data of Table IV show a considerably higher percentage of underweight children. This condition might be expected with the children of the "Open Air" class since they were primarily selected because they were anemic or there was a history of tuberculosis in the family. It is rather surprising, however, to find a similar situation existing among the children of the other special classes. These children being among the brightest in the school, one might expect to find them among the best nourished. Nevertheless, 27.5% of these children are 7% or more underweight. In the "Open Air" class only ½% more than this are as much underweight.

TABLE IV.

PERCENTAGE OF OVERWEIGHT AND UNDERWEIGHT CHILDREN

		Specials	Open Air
Children 7% or more overweight	Number....	7	1
	Per Cent...	10.1	4.0
From 7% overweight to 7% underweight	Number....	43	17
	Per Cent...	62.4	68.0
Children 7% or more underweight	Number....	19	7
	Per Cent...	27.5	28.0
Total	Number....	69	25
	Per Cent...	100.0	100.0

*Reports have been current this year that as many as 120,000 children in New York are undernourished and 240,000 more on the borderline of undernourished.

The Nutrition Classes

The following classification shows the number of the under-nourished children who were treated in our various nutrition classes:

7th grade	23
6th grade	28
5th grade	20
1st grade	26
Specials	17
Open Air	11

Conditions Offered.—We may group the conditions of treatment offered for these children under five general heads: The first considers instruction in health habits. These include the questions of rapid eating; using water to wash down the unmasticated food; the use of stimulants such as tea and coffee; eating when excessively fatigued; eating candy before meals; irregularity of meals; and the periods of sleep.

The second condition is the removal of all physical defects which interfere with the processes of nutrition. The removal of carious teeth or their repair, along with the removal of any naso-pharangeal obstruction is quite essential. This is a provision, the successful carrying out of which depends on various factors. The consent of the parents must be obtained. Some parents are quite indifferent to the necessity of freeing the child from such handicaps. The services of a surgeon or a dentist are required, and with the present demands on such services, they are difficult to obtain. With our cases about one-third of the necessary tonsil and adenoid operations was performed.

The third condition is that of frequent periods of rest. These under-nourished children are unable to store up in one rest-period sufficient energy or vitality to carry them through the day. It is necessary that a further opportunity to recuperate should be provided to enable them to stand the stress of a day's work. For this purpose a half-hour rest-period may be arranged during the morning.

The fourth condition is that food should be taken at frequent intervals rather than in great quantities at infrequent intervals. Four or five small meals per day may be much more beneficial than three large ones of equal caloric value. Lunch may be given to these children midway between the ordinary morning and noon meals.

The fifth condition which may be provided is that of direct feeding. It has been assumed in many instances that the reason for under-nourishment or malnutrition is inability to procure the necessary food. If this is the condition, food should

be supplied. The provision of a mid-day meal is the logical solution since it is at this time the schools are more directly responsible for the children.

Not all of these provisions were made for each of the six nutrition classes. If we indicate the five conditions by the five following terms: (1) instruction; (2) physical care; (3) rest; (4) lunch; (5) mid-day dinner; we can classify the conditions provided for the various groups in the following way:

7th grade—instruction, physical care, rest, and lunch.

6th grade—instruction, physical care, rest, lunch, and mid-day dinner.

5th grade—mid-day dinner.

1st grade—instruction, physical care, *advised to take rest and lunch.*

Specials—instruction, physical care, lunch and mid-day dinner.

Open Air—instruction, physical care, rest and lunch.

The chief consideration in making these arrangements was to determine the value of feeding as compared with that of instruction in health habits. The mid-day dinner provided for the 6th grade along with the other conditions and for the 5th grade as the only treatment which they received, has a caloric value of approximately 1,000. The lunch provided for the 6th grade and the other classes consisted of 300 calories.

Results.—The results obtained with these various methods of procedure are summarized in Tables V to X. In Table V, the increase in weight by pounds and percentages is shown. The total gain for the children in Grade 7 was 72 pounds. the expected gain[2] for the period during which the children were in the nutrition class (approximately 19 weeks) was 64.8 pounds. The net gain made by the children was therefore 7.2 pounds. The percentage of gain in excess of normal is 11.1. The children in Grade 6 for a similar length of time gained 109 pounds, which is 18.1 pounds more than the expected gain of 89.9 pounds for the period. The percentage of gain in excess of normal for the 6th grade is 20.1. The children in Grade 1 made very satisfactory progress. Their total gain was 55.7 pounds as compared with an expected gain

[2] The expected gain is calculated in the following way: The average yearly increase as given in the table of normal weights is used as a basis and a proportional increase for the period of the nutrition classes calculated. The normal increase for a 12-year-old boy is eight pounds. In the 19 weeks he would be expected to gain approximately three pounds. A 15-year-old boy should gain 14 pounds in a year and in the 19 weeks he would be expected to gain approximately five pounds. The expected gain thus refers to the normal or average increase for children of that particular age during the specified period.

of 40.5. This leaves them with a net gain of 12.2 or a percentage of gain in excess of normal of 37.5.

TABLE V

INCREASE IN WEIGHT BY POUNDS AND PERCENTAGES

Class	Grade VII.	Grade VI.	Grade V.	Grade I.	Total
Total gain.....	72.0	109.0	6.0	55.7	242.7 lbs
Normal gain.....	64.8	89.9	23.2	40.5	218.4 "
Net gain.....	7.2	18.1	–17.2	15.2	19.3 "
Percentage of gain in excess of normal	11.1	20.1	–74.1	37.5	8.8%

The 5th grade, to which dinner alone was provided, shows the poorest record. In this group 20 children were included in the beginning. At the end of the period 15 of them were weighed the second time; the remaining five were not present for the second weighing. Their total gain for the period was six pounds. Their expected gain was 23.2 pounds. This means that the children of the 5th grade, to whom a sufficiently large mid-day meal was given, gained at only one-quarter of the normal rate. They were 78.5% behind what was expected of them during the period of the nutrition class.

The result for all the groups is shown in the final column. Their total gain was 242.7 pounds, while the normal gain was 218.4. This made an excess of 19.3 pounds, or a percentage of gain in excess of normal 8.8. If we exclude the 5th grade results from this Table, we have a much more promising result. The total gain for the other grades is 236.7 pounds, as compared with an expected gain of 195.2 pounds. This means an excess gain of 41.5 pounds, or a percentage of gain in excess of normal of 21.3. In other words, these children, to some of whom dinner was not provided but all of whom were given instruction in health habits, and for some of whom certain physical defects were removed, gained over 20% faster than the average rate; while the children of Grade 5, who were supposed to have sufficient food to nourish them, not only gained nothing in excess of normal, but actually came out with only about one-quarter of the gain expected of them during the time they were given the meals.

Table VI shows similar data for the "Specials" and the "Open Air" class. The children of the "Open Air" class made a total gain of 13.7 pounds; whereas, their normal gain would be 23.2. They thus gained at only about one-half the rate expected of them. For this condition there is a partial explanation in the fact that the nutrition class was carried on while all the other children in the "Open Air" class were in the room. The class method of instruction and the spirit of cooperation

and competition could not well be worked. There was a constantly disturbing element in the presence of children who did not need and were not interested in the nutrition work. The result with the " Specials", however, is highly gratifying. The total gain for the 17 children was 61.6 pounds. Their expected gain was 43.2 pounds, giving a net gain of 18.4 pounds, or a percentage of gain in excess of normal of 42.6. These children gained almost 50% more than the average expected gain.

TABLE VI

INCREASE IN WEIGHT BY POUNDS AND PERCENTAGES

Class	Specials	Open Air
Total gain	61.6 lbs.	13.7 lbs.
Normal gain	43.2 "	23.2 "
Net gain	18.4 "	-9.5 "
Percentage of gain in excess of normal	42.6%	-40.9%

Tables VII and VIII show the number of children gaining either more or less than normal. Table VII includes the four regular grades; Table VIII the two special groups. It will be seen that in the four regular grades, seven children weighed less at the end of the nutrition period than they had at the beginning. Including these children, 42 gained less than was expected. Fifty children gained more than the normal rate of gain.

It is necesary again to consider the relation of the children of the 5th grade in this calculation. Out of the 15 children weighed the second time, four of them weighed less than at the beginning. A total of 12 children had made less than normal gain, while only three had exceeded this gain. Of the 77 children in the other three grades, only three had lost weight; 30 gained less than normal, while 47 had increased more rapidly than the average rate.

TABLE VII.

NUMBER OF CHILDREN GAINING

Class	Grade VII.	Grade VI.	Grade V.	Grade I.	Total
Children lost weight	1.	2.	4.	0.	7
Gained less than normal	13.	12.	12.	5.	42
Gained more than normal	10.	16.	3.	21.	50

TABLE VIII.

NUMBER OF CHILDREN GAINING

Class	Specials	Open Air
Children lost weight	0.	3.
Gained less than normal	3.	7.
Gained more than normal	12.	4.

The ratio of gain is always the important consideration, and it is desirable to know how many of these children gained at the varying ratios. Tables IX and X show this result with the regular grades and the special classes respectively. These Tables are divided in three sections: A, B, and C. Section A includes those children who actually lost weight during the time the nutrition work was carried on. In the 7th Grade one child's gain was between 125 and 150% less than normal; that is, this child who was expected to gain 3.4 pounds during the time he was in the nutrition class, actually lost 1.2 pounds. The loss of 1.2 pounds added to his normal expected gain makes a total loss of 4.6 pounds. This is a loss of 135% of normal gain.

TABLE IX

PER CENT GAIN IN EXCESS OF NORMAL

	Per Cent	Grade VII.	Grade VI.	Grade V.	Grade I.	Total
		Number of Children				
	Over 150	..	..	1	..	1
	150–125	1	1	1	0	3
A	125–100	0	1	2	0	3
	100– 75	3	0	1	1	5
	75– 50	4	3	5	2	14
B	50– 25	2	2	2	1	7
	25– 0	3	5	0	1	9
	0– 25	2	4	0	7	13
	25– 50	1	1	2	2	6
	50– 75	0	4	1	4	9
C	75–100	2	3	0	3	8
	100–125	1	0	0	1	2
	125–150	0	3	0	1	4
	Over 150	4	1	0	3	8

TABLE X

PER CENT GAIN IN EXCESS OF NORMAL

	Per Cent	Specials	Open Air
		Number of Children	
	Over 150	..	1
A	150–125	0	0
	125–100	0	2
	100– 75	2	0
B	75– 50	0	2
	50– 25	3	2
	25– 0	0	0
	0– 25	5	1
	25– 50	1	0
	50– 75	1	2
C	75–100	0	1
	100–125	2	0
	125–150	0	0
	Over 150	3	0

In Section B of these two Tables is shown the number of children who made a gain, but not as great a gain as was expected. These children increased from 0% to 100% of their expected gain. Two children of the 7th grade are shown as failing to gain from 25 to 50% of their expected gain. One of these children was expected to gain 4.4 pounds. He actually gained only 3.1 pounds. That is, he gained 1.3 pounds or 30% less than was expected.

In Section C are arranged those children who gained in excess of normal. There is one child in the 7th grade listed as gaining from 25 to 50% in excess of normal. This child was expected to gain 3.8 pounds, and he actually gained 5.2 pounds. He made an excess gain of 1.4 pounds, or a gain in excess of normal of 37%. In this same grade there are four children listed as gaining over 150% in excess of normal. The per cents of gain in excess of normal for these four children were 207, 209, 216 and 655. The child who gained 655% in excess of normal had been in the clinic only seven weeks, in which time he was supposed to gain 0.9 of a pound, and he actually gained 6.8 pounds. In the beginning he was one of a few children who were somewhat less than 7% underweight. His actual weight was 78.3 pounds, while he should have weighed 83.2 pounds. He was 5% underweight for his height. The child who gained 216% was in the clinic 12 weeks. He was expected to gain 2.5 pounds and actually gained 7.9 pounds. This child in the beginning was 15% underweight, having weighed 120.3 pounds when he should have weighed 142.7 pounds.

The final column of Table IX indicates the total number of children making the various percentages of gain in excess of normal. Of the 50 children who made a gain in excess of normal, 13 of them made a gain of from 0% to 25%, and eight of them made a gain of over 150% in excess of normal.

The distribution shown in Table X is for the "Open Air" class and the "Specials." Of the 11 children in the "Open Air" class three of them show a failure to gain of from 100% to over 150% of the normal gain. Only four show an excess gain of 0% to 100%. The one child shown as gaining from 75 to 100% in excess of normal actually gained just double the expected amount. In 14 weeks he was expected to gain 1.4 pounds; he gained 2.8 pounds. The distribution for the "Specials" shows up in quite marked contrast. Twelve of the 17 children show gains ranging from 0% to over 150% in excess of normal. Three of these 12 children gained more than 150% in excess of normal.

Why Children Gain or Do Not Gain

Enlarged Tonsils and Adenoids. The presence of enlarged tonsils and adenoids apparently has a marked effect upon the nutrition of a child. Of the children examined 69 were recommended to have an operation for the removal of tonsils or adenoids or both. Four children were not examined and 32 were found to have a clear record. The percentage of those needing operation is very high. Out of the 105 children included in the classes, 69 suffered from obstruction in the breathing passages. This is 66% of the total number. Two out of every three under-nourished children fail to get sufficient oxygen. Of those who were recommended to have an operation performed, 49 failed to have the recommendation carried out. A comparison of the gain of these 49 with the gain of the 32 who did not need an operation is shown in Table XI. The first part of the table shows the gain of the tonsil and adenoid cases. In the five groups, including the 7th, 6th, and 1st grades, with the "Special" and "Open Air" classes, four children lost weight; 18 made less than normal gain, 24 gained from 1 to 100% in excess of normal; and three gained over 100% in excess of normal. The second part of

TABLE XI.

Gain of Children With Tonsils and Adenoids Compared With the Gains of Children Without Enlarged Tonsils and Adenoids

Adenoid and Tonsil Cases

Grade	Lost Weight	Less Than Normal Gain	1—100% More Than Normal Gain	Over 100% More Than Normal Gain	Total
VII	1	7	3	..	11
VI	2	3	2	..	7
I	..	5	15	1	21
Specials	..	1	2	2	5
Open Air	1	2	2	..	5
Totals	4	18	24	3	49
Per Cent	8.2	36.7	49.0	6.1	100

Without Adenoids ro Enlarged Tonsils

Grade	Lost Weight	Less Than Normal Gain	1—100% More Than Normal Gain	Over 100% More Than Normal Gain	Total
VII	..	1	2	2	5
VI	..	4	4	3	11
I	..	..	1	3	4
Specials	..	3	4	2	9
Open Air	1	1	1	..	3
Totals	1	9	12	10	32
Per Cent	3.1	28.1	37.5	31.3	100

the Table deals with children who had no need of an operation. In this group only one child lost weight. Nine made less than normal gain; 12 made a gain of from 1 to 100% in excess of normal; and ten a gain of over 100% in excess of normal. These numbers do not show the condition quite accurately since in the second group there are only 32 children, and in the first group there were 49. The percentage as shown at the end of each section indicates the condition more accurately. Of the children who gained from 1% to 100% in excess of normal, there were 37.5% of those without tonsils and adenoids as compared with 49% of those having this breathing obstruction. But of those children who gained over 100% in excess of normal, there were 31% without enlarged tonsils and adenoids and only 6% of those who suffered from this obstruction in breathing. Combining the percentages of those who gained more than normal, we find there were 68.8% of those who did not need an operation and only 55.1% of those for whom an operation was necessary.

A somewhat clearer indication of the effect of this naso-pharangeal obstruction may be obtained from studying Table XII. In the second column there is shown the percentage of gain for five weeks previous to an operation for the removal of enlarged tonsils and adenoids, and in the third column the percentage of gain for a five weeks' period following the operation. Before the operation seven children during the five-week period lost weight and 12 gained. During the five-week period after the operation only one child lost weight whereas 18 gained. One other child had an operation for the removal of this breathing obstruction, but he is not included in this calculation since at the same time he was suffering from an attack of La Grippe, and his gain in the following period is probably largely due to the recovery from this sickness. During the five weeks previous to the opera-

TABLE XII.

PER CENT OF GAIN OF CHILDREN BEFORE AND AFTER TONSIL AND ADENOID OPERATION

No. of child	Before	After	No. of child	Before	After
1	2.4	1.4	11	-1.3	2.5
2	3.6	8.2	12	1.1	3.3
3	1.7	1.0	13	0.6	1.9
4	0.5	5.6	14	-0.9	3.4
5	-0.3	1.5	15	3.3	4.6
6	-1.3	3.4	16	5.8	-1.3
7	0.6	2.5	17	0.9	4.0
8	-2.8	5.8	18	-0.3	4.7
9	2.8	3.9	19	-1.7	1.5
10	0.9	6.4			

tion and sickness, he had gained at the rate of only 0.3%. In the five weeks following his operation and three week-period of illness, he gained at the rate of 12.7%. The other nineteen children previous to the operation gained at the rate of 0.8%; but during the five weeks following the operation they gained at the rate of 3.4%. These two five-week periods were separated by at least a week. During the week of the operation a child almost invariably lost weight, and this week was allowed so that recovery from the effect of the operation might be made, and the child would be in the same position at the beginning of the second five weeks as he had been at the end of the first five.

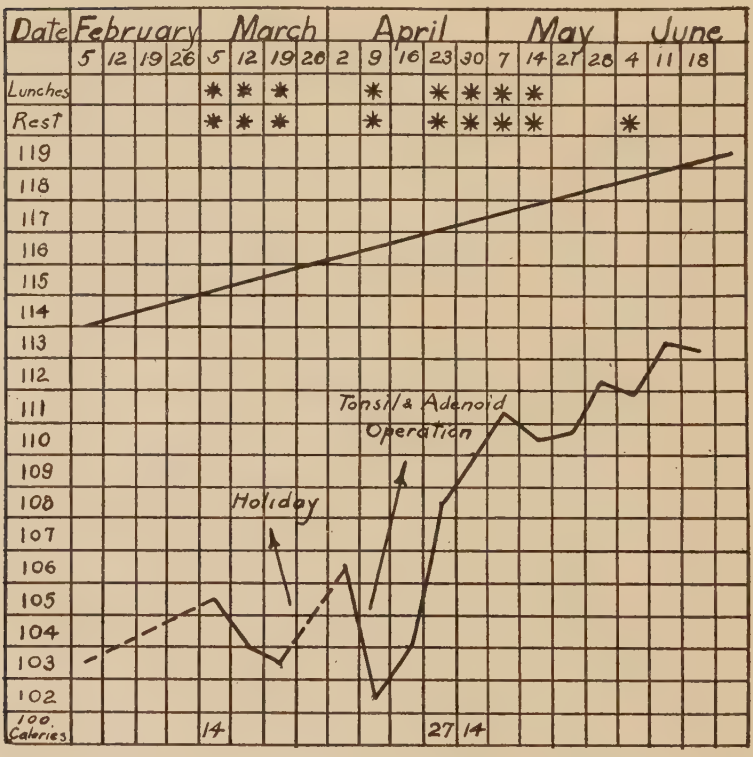
Carious Teeth. Our results do not show a very marked effect of carious teeth on the per cent of underweight. There were 17 of our 105 children for whom no record was obtained. Of the other 88 children, 25 had no carious teeth. The remaining 63 had from one to 12 carious teeth. The distribution of the children with the average percentage of underweight is shown in the following statement:

Number of carious teeth	No Record	0	1	2	3	4	5	6	7	8	9	10	11	12
No. of children.....	17	25	21	12	9	8	3	3	2	2	1	1	0	1
Average per cent under weight.....	10	10	9	8	13	9	10	10	16	10	13	9	0	13

These numbers are entirely too few to lead us to any clear-cut conclusion, but it is significant that the average per cent of underweight children without and with carious teeth remains approximately constant. The one child who had 12 carious teeth was only 13% underweight, whereas the six children with five or six carious teeth were on the average 10% underweight. These figures are suggestive, and, taken in combination with the figures for those who had no carious teeth and for those who had one, they are decidedly interesting. Twenty-five children had sound teeth. They averaged 10% underweight. Twenty-one children had one carious tooth, and averaged 9% underweight. When one considers that in the latter group were included four children of the "Open Air" class who were only 3, 4, 6 and 6% underweight, we find that the average per cent of underweight children who have one carious tooth is approximately the same as the average per cent of children who have no carious teeth. This is by no means an argument for indifference to the problem presented by the presence of carious teeth; but it does suggest that there may be very faulty conditions of the teeth without in any way interfering with the chewing surface or supplying sufficient toxins to the system to interfere with the process of digestion.

Individual Children.. In the following charts we have presented the records for five different children for whose original underweight and for whose later progress various reasons might be given. In the first line of these charts there is indicated the date on which the nutrition classes met. The stars of the second and third lines indicate that the child

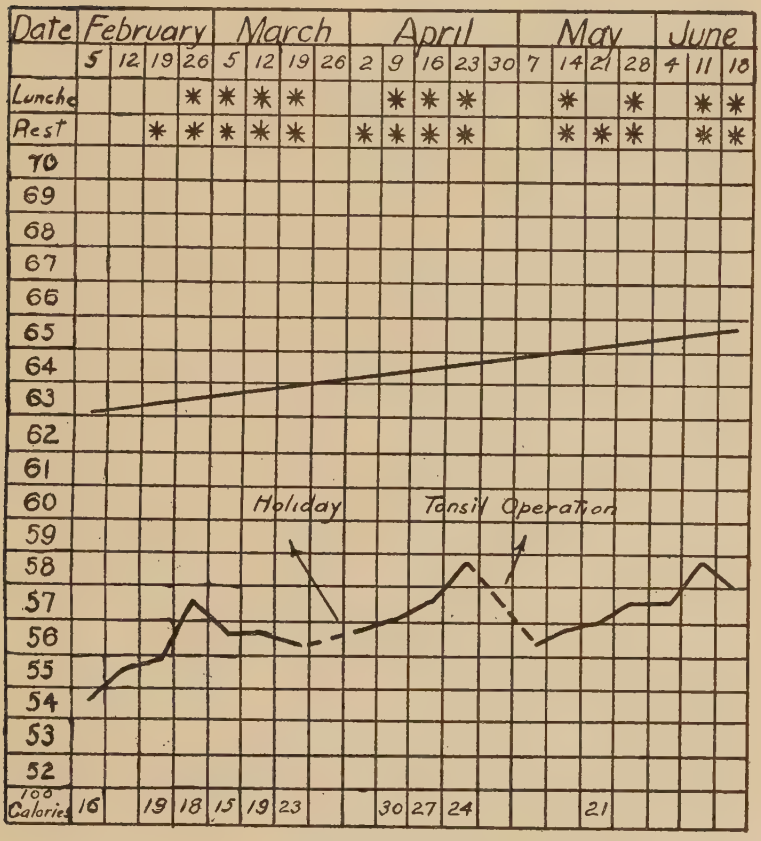
CHART I



took daily mid-morning lunches and a mid-morning rest. In every case where the child had a record of seven mid-morning lunches for the week, he was given a red star. In the same way a blue star was given for the observance of the seven rest periods. The figures in the left-hand column give weights in pounds. The heavy straight line, in every case the upper line of the chart, indicates the average weight for children the same height as this child. The broken

lower line shows the weekly increase or decrease. The last line of figures is the average daily number of calories taken on the basis of the record of the food eaten in a two-day period.

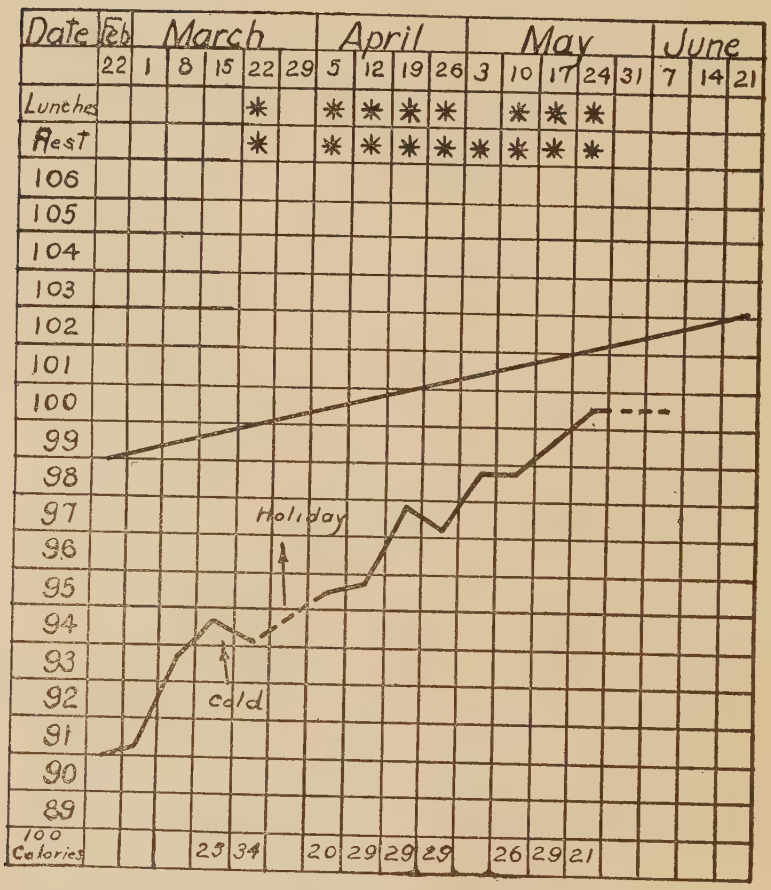
CHART II



The first chart is for a boy of 15 years of age who was expected to weigh 111 pounds. He actually weighed about 104 pounds. Before entering the clinic, his meals had been very irregular and he had not taken time to eat. Along with that he did a great deal of work outside of school hours. He also had difficulty in breathing, enlarged tonsils and adenoids obstructing the air passages. The three records

which are given of his diet indicate that he did not eat enough for a boy of his age and size. During the first four weeks of the clinic he did not attend, and in the following

CHART III

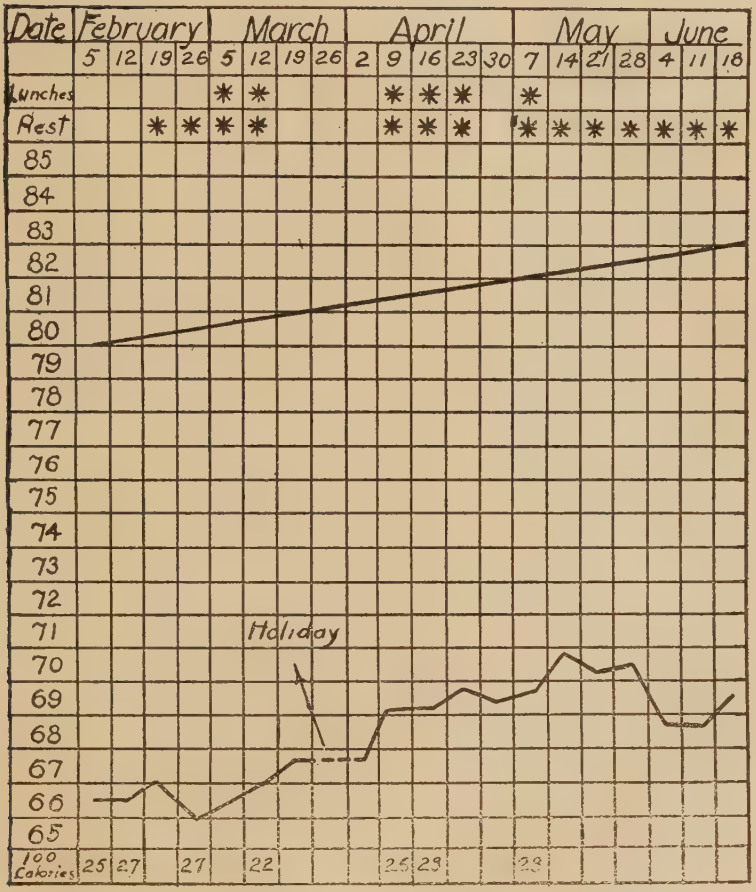


two weeks he lost in weight, as recorded. During holiday week he made a decided gain, but dropped back to his lowest point, following an operation for the removal of enlarged tonsils and adenoids. He also ceased working the long hours after school, and his gain was continuous until the first of

May, at which time he began working outside of school hours, and later ignoring the daily rest period and lunch.

Chart No. 2 gives a record of a problem case. This child

CHART IV



is almost ten years old, and at the beginning of the clinic was 12 per cent underweight. She had not been taking a sufficient amount of food and had frequently come to school without any breakfast. She was an exceptionally intelligent child and rather than be late for her morning class, would

rush off from home completely ignoring breakfast. Despite the fact that she was fairly regular in taking the mid-morning lunch provided, the number of calories taken daily did not increase sufficiently to bring about an increase in weight. Fair progress had been made up to the end of April, at which time an operation for the removal of tonsils was performed and she lost more than two pounds. During the following week she kept no record of the amount of food taken, and her increase in weight is not much more rapid than the normal increase.

The various factors which we have so far considered as being operative in preventing or in bringing about an increase in weight do not seem to have played a part in this case. This suggests that there may be other factors of which we have not yet taken account. It seems to us that an explanation for failure to gain may be found in certain emotional disturbances. Some of our children have had periods of anxiety or worry and have shown a decrease in weight. In other cases where the child failed to gain there has been antagonism toward other members of the household. Our data give no definite basis for estimating how far emotional disturbances may influence the process of digestion. We are convinced, however, that in some cases of undernourishment the emotional disturbance is an important contributing factor. Cannon[3] has shown that fear and anger are attended by a prompt cessation of the churning movement of the stomach and the cessation of the flow of gastric juice. It seems highly probable that the emotional conditions in our children may also have similar concomitants. Further work in a nutrition class will not be complete until these factors have been studied.

Chart No. 3 shows a very satisfactory progress. This child was nine per cent underweight at the beginning, and the use of tea and coffee of which he had taken much, seemed to be an important factor in keeping him under-nourished. While he increased to a certain extent the number of calories taken, this increase could only partially account for the rapid rise in weight which brought him by the end of May within two per cent of normal. At this point he neglects his daily rest and lunches, and on his only other return to the class, has made practically no gain for a two-week period.

The record of another child who fails to make the desired progress is shown in Chart No. 4. This child was sufficiently interested to report the amount of food taken at various times, but he suffered from an obstruction in his breathing

[3] Cannon, W. B. "Bodily Changes in Pain, Hunger, Fear and Rage." New York. Appleton, 1915. pp. XIII+311.

through the presence of enlarged tonsils and adenoids. It seems evident in this case that rest and lunches are not sufficient to cause an increase in the weight when such factors as breathing obstructions are permitted to operate.

Eliminations. Of the 105 children enrolled, 15 were eliminated. Two of these graduated. That is, before the period of the nutrition classes elapsed, they had reached normal weight for their height. The other 13 children were excluded from the class for various reasons. Sometimes the difficulty was refusal on the part of the parents to have an essential operation for the removal of tonsils and adenoids performed. They could not see the necsssity of having the child in good physical condition; and the handicap of obstructed breathing was too great to be overcome. In other cases the children were unruly and indifferent to the procedure. They disrupted the class and made it impossible for the other children to benefit by the instructions. The situation with those children indicates the difference between the conduct of a *nutrition class* and the conduct of a hospital clinic for malnutrition. In the latter there are found only those children whose parents have realized that something is wrong. The children have been brought to the clinic in order that advice may be given concerning the best method of treatment. The parents are not only ready but anxious for instruction which will enable them to take better care of the child. In the nutrition class, on the other hand, we gather together those whose parents may not have realized that these children were not as strong and healthy as others. They are not coming for instruction or advice and when some outsider suggests that different care is necessary, they may be, if not resentful, at least indifferent. Some means of gaining their interest and cooperation must be devised if the methods of the nutrition class are to be beneficial. In a few cases it was found impossible to interest the parent in the success of the child. Some children were not put into good physical condition. The reason was not alone the parents' indifference but also the impossibility of making satisfactory hospital arrangements for the children at the time of operation.

What is Done in Organizing and Conducting a Nutrition Class

Weigh, and Measure the Height of the Children. The initial step in organizing the nutrition class is the weighing and measuring of the children. The height being determined, the average weight for that height can be obtained by referring to the following table:

TABLE OF HEIGHT AND WEIGHT*

Boys			Girls		
Age	Height	Weight	Age	Height	Weight
2	32	27	2	32	26
	33	29		33	28
	34	30		34	29
3	35	32	3	35	31
	36	33		36	32
	37	35		37	34
4	38	36	4	38	35
	39	37		39	37
	40	38		40	38
	41	40	5	41	40
5	42	41		42	42
	43	43	6	43	43
6	44	45		44	45
	45	48		45	46
7	46	50	7	46	48
	47	51		47	50
	48	53	8	48	52
8	49	54		49	54
9	50	60	9	50	57
	51	62		51	60
10	52	65	10	52	63
	53	68		53	67
11	54	71	11	54	70
12	55	77		55	74
	56	80	12	56	79
	57	82		57	84
13	58	85	13	58	89
	59	90		59	93
14	60	95	14	60	98
	61	99		61	102
	62	103	15	62	107
15	63	107	16	63	112
	64	114			
16	65	121			

This table is constructed on the basis of the data furnished by Holt, Burk, and Boas. The first and fourth columns give ages. In the second and the fifth columns the heights of children are given by steps of one inch. The third and sixth columns give the corresponding weight for those particular heights. These figures are for the nearest pound or inch for the various ages. The number of inches between successive years is then taken and a proportional increase in

* The measurements for children below the age of 5 are taken from the data furnished by Holt, and the measurements are for children exactly 2, 3, and 4 years of age. From 5 years on the measurements for each year are for all the children between two successive years. For example: the measurements for those called 5 years old are for all children in the sixth year of life. This means that the average age of the group is five and one-half years. In the same way the measurements are given for 6-year-old children, 7-year-old children, etc.

pounds is calculated. Between the years 15 and 16 a boy increases two inches in height. In the same time he increases in weight 14 pounds. For each inch increase in

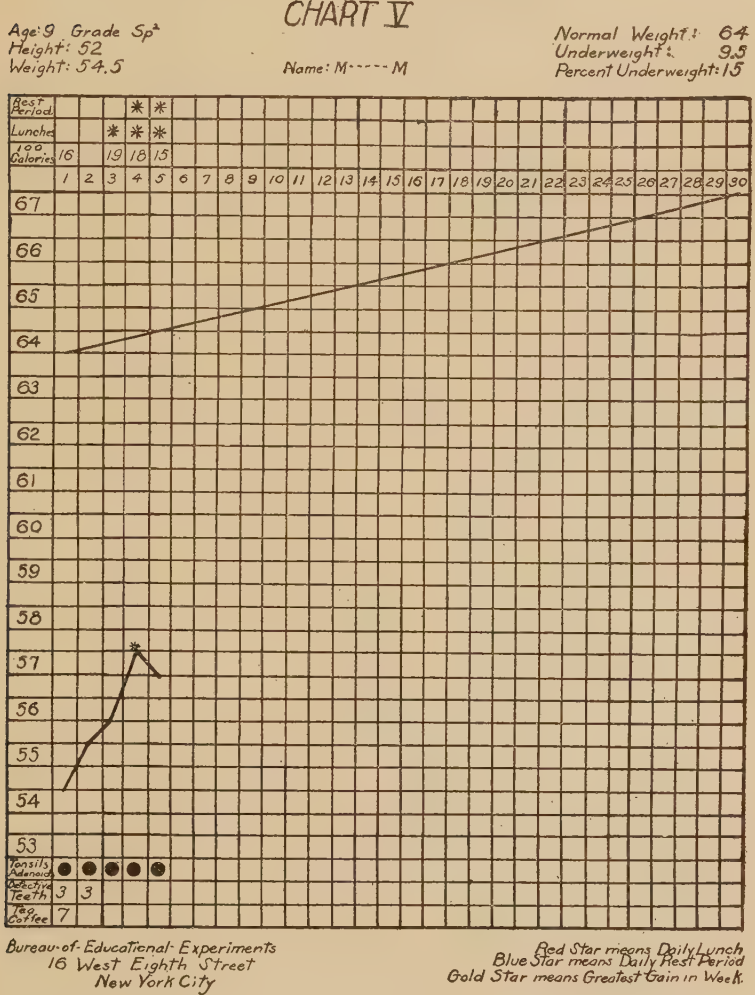


CHART V
Age: 9 Grade Sp²
Height: 52
Weight: 54.5
Name: M----- M
Normal Weight: 64
Underweight: 9.5
Percent Underweight: 15
Rest Period
Lunches
100 Calories
16 19 18 15
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
67 66 65 64 63 62 61 60 59 58 57 56 55 54 53
Tonsils, Adenoids
Defective Teeth 3 3
Tea, Coffee 7
Bureau of Educational Experiments
16 West Eighth Street
New York City
Red Star means Daily Lunch
Blue Star means Daily Rest Period
Gold Star means Greatest Gain in Week.

height he is considered, therefore, to increase seven pounds in weight. Suppose a boy measures 42 inches in height. If he were the average weight, he would be 41 pounds. Or, if one were 52 inches high he should weigh 65 pounds. Let us suppose that this boy weighs only 58 pounds. He is seven

pounds underweight. That is, he weighs more than 10 per cent less than the average child of his height. The height and weight of every child with the percentage over or under weight are determined in the same way. All children who are 7% or more underweight may be considered candidates for a nutrition class.

Instruct Them in Health Habits. The nutrition class works on the assumption that every child wants to be like other children. "All girls want to be attractive and beautiful. They also want to do as other girls do—dance, swim, and play tennis. Every boy wants to be athletic. The desire to play base ball and foot ball can always be aroused in him sufficiently to cause him to do almost anything to gain a good physical condition for that purpose."[4]

To bring about the necessary competition, various methods are used. One of the most important of these is the use of a chart. The one which has been designed for the purpose is shown in Chart V. The name of the child is printed in large letters, and then his age, grade, original height and weight are recorded. Along with this are given his normal weight, the number of pounds and the per cent underweight. The chart is arranged to contain the results for thirty meetings of the nutrition class. These meeetings are indicateed in the fourth line of the chart by the numbers from 1 to 30. In the column corresponding to each of these numbers the weight which the child has reached is recorded. The weights are given in the left-hand column, the lowest number in the column being one or two pounds less than the weight of the child at the initial meeting of the class. The normal weight line is shown by the heavy straight line running diagonally upward across the chart. The record of the weekly weighing is shown by the lower line.

Those factors which have been found to be most important in dealing with the problem of under-nourishment may be divided into two classes: positive or helpful and negative or detrimental. The positive or helpful group includes the observance of a daily rest period and the taking of a daily lunch. These two things are necessary because the child, being ill, lacks the vitality or energy to carry him through the ordinary day. He is unable through the night to store up sufficient energy. He is also unable with the ordinary three meals to assimilate enough to bring him up to normal weight. More frequent rest periods and more frequent meals are necessary. Eating more food at the three designated periods

[4] Emerson, W. R. P. Measured Feeding for Older Children. Bost. Med. & Surg. Jour., 1914. Vol. 170, pp. 80-83.

is not so beneficial as a smaller quantity taken more frequently. The third positive factor is the actual number of calories taken. It has been found that many of these children are not taking sufficient food. To determine whether or not the amount is sufficient a record should be kept of all the food taken on two successive days and the average daily amount determined. The child records in a "Diet Book" the number of slices of bread, the ounces of milk, the tablespoonsful of cereals, the amount of meats and of all other things consumed in all the meals of two days. For most of these children, the amount should not be less than 2,000 calories; and children have been found who, without any disturbance to the digestion, could take as many as 3,500 calories per day.

In order to check up on these three positive factors, the first three lines of the chart are used. The actual number of calories is recorded. If a child takes the mid-morning lunch and observes the mid-morning rest period, a red and blue star, respectively, are inserted in the corresponding column for the week. If he fails to do either of these things daily, he is credited with the actual number of days of the week in which he fulfilled the requirements.

The negative or detrimental factors in the problem of malnutrition are the presence of enlarged tonsils and adenoids, the presence of defective teeth, and the use of stimulants, usually tea and coffee. The last three lines of the chart are devoted to a record concerning these factors. If the child has no need of an operation for adenoids or enlarged tonsils, this line remains clear. If an operation is necessary, a black seal is placed in the column which includes the results found in the first meeting of the nutrition class. For each successive week this is repeated until the breathing obstruction has been removed and the line from that point on remains clear. The number of defective teeth is recorded. If in the beginning all the teeth are sound, the line remains white. As the dental work is done and the defective teeth removed or cared far, the number becomes smaller until all the teeth are sound, and from that point on the line is a clear record. In the same way with the use of tea or coffee, the number of days when the child indulges is recorded. The largest possible number is seven; and as soon as he eliminates tea and coffee from the diet, the line becomes white and is only again marred when the child indulges in the prohibited stimulants. The two classes of factors are differentiated in the following way. For the positive or helpful the aim is to get a star or a large number for every week. For the negative or

detrimental factors the aim is to eliminate the black marks and have a clear record all across the chart.

As the children enter the room for the nutrition class, they find arranged against the wall the charts for all the children. At one end of the line we place the chart of the child who has made the greatest gain since the previous meeting. The chart of the child who has gained the least or lost the most during the week is placed at the other end of the line. To the first chart a gold star is attached which will stand for the child always as an emblem of accomplishment in that particular week; and he will be stimulated to make ever greater efforts to have as many gold stars on his chart as he possibly can. In this way he has not only the general competition of reaching the normal weight line first, but he has the specific task of making the greatest gain every week he is in the class.

As the children take their places, they arrange themselves according to the order of the charts. At the one end are those who have made the greatest gain; at the other end are those who have made the least. The instructor then takes up the various factors which may have been instrumental in causing the gain, in preventing a larger gain, or in causing an actual loss. Of these factors there is a considerable number. Some of them we have already dicussed in the two groups of helpful and detrimental factors. Certain other conditions are important, and they are also considered in the discussion. If a child uses water as a flush with his meals and washes the food down without proper mastication, he may be taking a great many calories but with the food in such condition that he derives no benefit from it. The children are encouraged to eliminate water from the meals unless it be at a time when there is no food in the mouth. The number of hours of sleep and whether the child sleeps where he can get plenty of fresh air, and whether he is taking so much exercise in play or work that he becomes excessively fatigued, are all factors which the instructor considers in his teaching of the children.

The question of what to eat is sometimes stressed. No attempt is made to change the diet of the family. What is eaten is first ascertained by studying the records which the children submit of their actual food. In those cases where the proportion or amount is not satisfactory, certain changes may be suggested. Such recommendations must be made on the basis of the individual's preferences and habits. Many children do not take sufficient cereal or milk and they lose the advantage of the high caloric value of these two foods.

It frequently happens that the reason for not taking them is a dislike for them. A liking for them may be developed. It cannot be imposed arbitrarily. As Bayliss[5] says "The change of any habit is apt to cause at first a feeling of want. This want is purely mental or psychological." The demands of the body may be met in large part by cereals and milk, but any change in diet may be disagreeable to the child, and such a possibility must be considered by any one attempting to feed school children. As the author above named says "It has been noted that Irish peasants used to the consumption of voluminous rations of potatoes have complained of hunger and even of starvation when given food of greater value but of smaller bulk. Similarly, Bavarian peasants, used to bread, complain if given a diet of meat." The likes and dislikes of children in regard to food may seem to an adult merely whim or fancy. As such they are nevertheless real and must be considered when we attempt to meet the problem of under-nourishment by supplying quantities of food. Not only the racial characteristics, but the group preferences must all be considered when planning a diet. The food which has high caloric value, may, because of its strangeness, be entirely unsatisfactory; and the children who are supposed to eat it must be educated gradually.

From this discussion of the conduct of the nutrition class it may readily be seen that the problem must be met not alone by school feeding, but also by an educational procedure. If it were possible to bring a child up to normal weight by a simple process of feeding, there would still be an important element of the nutrition class completely ignored. The educational side of the question would not be touched. This is an important phase. It is not sufficient to bring a child up to normal weight and leave him without habits which would continue him in that condition. Rather it is essential that during the process of return to normal weight he should have acquired something which would carry over and have an important influence on his future life. He must be educated in matters of personal health and hygiene, in the reasons for eliminating certain things such as the use of coffee, and the reasons for the observance of certain other things such as the amount of food, periods of sleep and rest, slow eating, etc. If, at the end of the nutrition class, a child has failed in getting these fundamental elements, even though he has been brought up to normal weight, the function of the nutrition class has not been served. Knowing why it is necessary to

[5] Bayliss, W. M. The Physiology of Food and Economy in Diet. Longmans, Green & Co., 1917. p. 94.

do certain things and having formed a habit of doing them, the child is in a much better position to face further difficulties than though he had been just passed on well equipped for the moment, but with no background of experience to maintain that position.

CONCLUSIONS

I. Every child should be weighed and measured and those who are as much as seven per cent underweight for their height should be selected for nutrition classes.

II. Provision of food is not in itself adequate to solve the problem of malnutrition.

III. Habits such as rapid eating, using water as a flush, eating when excessively fatigued or irregularly, should be corrected.

IV. Stimulants such as tea and coffee must be eliminated.

V. Physical defects, such as naso-pharangeal obstructions, must be removed.

VI. The amount of food should be carefully measured. A record of two consecutive days' consumption is a fairly reliable index for a week.

VII. Rest and food should be given at not too long intervals. A mid-morning lunch and rest are needed by those children who are unable to store up a reserve of energy.

VIII. The Nutrition Class offers an opportunity for teaching many children hygiene and health habits. The competitive spirit is aroused. The chart shows actual gains or losses, and the children see the connection between these changes and the things that are spoken of as causes.

LANGUAGE DEVELOPMENT DURING THE FOURTH YEAR

The Conversation

By G. C. and Julia Brandenburg, Purdue University

In an article in the Pedagogical Seminary of March 1915 an account was given of the language development of our daughter G during the fourth year. The data presented in that article were largely of the vocabulary growth. In the present article we shall attempt to describe some other phases of G's linguistic growth during the fourth year.

During the time the study was being made we lived in Madison, Wisconsin, where the father was engaged in graduate work and teaching in the University. There was naturally a good deal of studying, reading, writing, and discussion of educational matters in the home at that time as there has always been. It is hardly conceivable that this should not be reflected in the child's language as G has always shown a keen interest in all the activities of the home and is never satisfied in being a mere spectator. She insists on taking part in everything and manifests considerable annoyance when there is discussion in her presence which she cannot, at least, partially understand.

When G was 40 months of age a record was made of her conversation for an entire day and this was repeated just 12 months later when she was 52 months old. It was naturally more difficult to record verbatim all she said during the day in the latter case. We used an improvised system of shorthand and took turns writing, each working about an hour at a time. Even then, it was found impossible to get everything down precisely as it was uttered. As an aid in the interpretation of mental growth such records are obviously of considerable value for if the vocabulary record represents the "linguistic tool chest" of the child, the conversation record indicates the facility with which the "tools" are used.

The following table presents an analysis of the day's speech hour by hour:

TABLE I

Hours.....	7:00	8:00	9:00	10:00	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	Total
Words spoken....	1495	925	1256	968	1496	1366	1224	662	1511	1196	1241	1183	406	14,930
Singing and Babbling.	282	365	73	140	50	70	0	10	30	15	10	130	130	1,305
Questions..	40	18	32	28	27	31	37	13	34	32	71	31	3	397
Meaningless questions.	0	0	0	1	0	0	2	0	0	0	2	0	0	5
Sentences..	209	104	163	123	184	163	158	87	184	180	177	175	60	1,967
Average words per sentence..	7.1	8.9	7.7	7.8	8.1	8.3	7.7	7.6	8.2	6.6	7.0	6.7	6.7	7.5
Minutes silent.....	0	0	12	7*	0	0	0	20	0	0	0	0	0	39
Use of I, me, my & mine	152	72	59	50	97	86	81	30	62	70	88	73	38	958
Use of you & yours..	73	24	47	36	42	51	26	21	43	37	52	40	3	495
Use of we, our & us	3	11	14	1	1	0	27	2	5	2	8	5	2	81
Use of Mamma..	75	29	53	47	33	48	64	14	24	42	52	19	8	327
Use of Papa	38	18	23	15	13	21	27	25	44	29	40	33	1	508

*Humming during these seven minutes.

Total Words.—The total number of words uttered is not quite so large as it would have been if G had not spent 20 minutes of the two o'clock period in the library looking at picture books; during this time none of her speech could well be recorded. There were two other periods spent out of doors walking when it was impossible to record all that was said. These two amounted to 40 minutes. She uttered during the day, according to the record, 14,930 words, an average of 1244 words per hour. At 40 months of age, one year before this, she spoke 11,623 words in the day, an average of 950 per hour. Children evidently differ greatly in the quality and quantity of liguistic expression during the day. We have always considered G rather talkative. Mrs. Nice's daughter E, at 63 months used only 10,500 words in a day, but one of Bell's children used 15,230 words at three and one half years of age while another of four years found use for 14,996. None of the children reported by Gale used so large a number, being younger children. It is quite obvious from these records that G is not abnormal in the number of words used in a day.

Singing and Babbling.—It is interesting to note how large a part music plays in the daily life of a child. While it was not possible in every case to record the syllables and words just as they were uttered, it was not difficult to get the number of these and so it is believed that this is approximately correct. It will be noted that singing is recorded in the one o'clock period. The detailed record shows that the child hummed several times during the hour but used no words. Thus there was not an hour in the day in which some musical expression

did not occur. The most musical periods seem to be early in the day, in this case during the first two waking hours. In considering this phase of G's expression, it must be remembered that she has never been able to carry a tune and apparently only distinguishes between different airs by the words. Frequently the singing is a matter of chanting some ordinary phrase in a rhythmical manner as: "See my dollie, see my dollie." Very frequently such chanting is accompanied by rhythmical motions of some part, or of all of the body. There is still a small amount of pure rhythmical babbling such as: "Rub dub de da," "Zuz zuz ze ze," etc. This is always in rhythm, and frequently has some semblance to a tune. It thus appears that G is still in the rhythm, or lowest, stage of musical development, a stage which many children of her age have passed, but one beyond which a small percentage of children never go.

Questions.—The total number of questions asked during the day was 397, an average of 33 per hour. A year before, she asked 376 in the course of the day, so there has been little change so far as the quantity of interrogation is concerned. There are, however, slight changes in the nature of the questions which are probably significant. There are not more than five of the 397 questions which appear to have been asked merely to be getting attention or to be talking and in these cases it is not certain that they were not bona fide. As far as possible we have always answered G's questions when they were genuine, as they usually were. The following are typical questions from G's speech at 52 months of age:

(On the street passing Mr. Schumacher's house which was being remodeled.)

G. Papa, where's Mr. Schumacher?
F. At his store I suppose.
G. Well, I thought he was going to tear his house down?
F. He was, but he has to stay at the store.
G. O, so he hired some other men to take his house down, did he?
F. Yes.
G. Does he stay at the store all the time?

(To her father writing.)

G. Are you tired, Papa?
F. Yes.
G. It's too bad isn't it, Mamma? I wish I had a little brother or sister to do all that work. Now, do you see? Say, Papa, why don't you let me do that work and then you wouldn't get so tired?

Questions at 40 months of age:

G. Papa, do you want my buggy fixed so it won't make so much noise? This way, Papa? Mamma where are you going?

At this age the child's mind seldom remained on one subject long enough to ask more than two or three questions about it and then it would jump to some other subject perhaps entirely foreign to the first. More often only one or two questions were asked at the same time on the same topic as is illustrated by the following from her speech at 42 months:

G. (To her aunt) Aunt Laura, did you change your mind?
A. No.
G. Did you go out to your farm?
A. Yes.
G. I can turn the water on. I'm going to wash my hands. Dinner (At the table).
G. How do we make high chairs, Mamma? Aunt Laura, where's my—— Here's my fork. Give me my knife and spoon and fork and knife. Am I dressed? Will you put that down, Papa? Dinner is served, Mamma.

Considering the great number of questions asked by a normal child of four or five years of age, it is really no wonder that parents often acquire the habit of answering most questions with, "I don't know" or, "Keep still, don't bother me," etc. And still, when we see what a small percentage of the child's questions are without a quite definite purpose to the child, it is apparent that we must adopt a more intelligent method of dealing with the questions; otherwise the mental development of the child is bound to suffer. True, the child must not be encouraged in asking all sorts of silly questions or in repeating questions over and over again thus developing a sort of artificiality or affectedness in his expression. It is just as important that this practice as well as the other extreme be avoided for the welfare of his mental life. Only by careful and constant observation in each case is it possible for the parent to adopt and pursue a sane course.

Sentences.—As nearly as can be determined there were spoken during the day, 1873, one year previous. A considerably larger number of words and sentences were spoken in the first hour of the day than in any other. The child seems to awaken in the morning full of energy and enthusisasm which manifests itself in an outburst of linguistic expression. The average number of words per sentence for the entire day is approximately 7.5, as against an average of 6.6 the preceding year. The number of words per sentence seems to

be small in the first period of the day and during the last four periods. The separation of the child's conversation into sentences is in many cases an arbitrary matter since several sentences are frequently run together without much attention to inflection in the child's haste and enthusisam in telling something. The following paragraph illustrates G's sentence structure where it is at about its best on this day:

"Mamma, I'm goin' to have you wash this when it gets dirty. Yes, the lace'll get dirty, but I'll have you take the lace off when you wash it. See, just like this? Well, Mamma, where shall I put my other pillow 'cause it takes all the room here? Mamma, I tell you. We'll put this here 'cause it's clean. Uhuh. I know where I'll put it now. I'll have them lay down here and then when I want them to sit up I'll have them sit up here."

The following illustrates the sentence structure at the same period of the day one year before:

"Are you going to let the hen out? Take hold my hand. I am starved to death. I want an orange. I am hungry. I don't like bread without butter. We don't have bread after we've had orange, Mamma. I can find a big piece when it's good."

The sentence structure has become, during the year, somewhat more complex, a little smoother, and slightly more coherent; and it is perfectly evident, if our observations can be relied upon to any degree, that G's mental operations have been modified in precisely the same ways.

Amount of Silence.—At no time during the entire day except when she was in the library, was G silent for a period to exceed four minutes, and the total amount of time that she was linguistically inactive outside the time spent in the library was only 19 minutes. No record was made, however, of silence where the periods were less than one-half minute in length. It is, indeed, hard to believe that a child can maintain such an incessant linguistic bombardment for so long a time, and yet it takes little observation of children of G's age to convince one that this is characteristic of a normal child. Naturally, a child would ordinarily be compelled to be quiet more of the time than was G on this particular day since others in the family would consume a considerable portion of the time in conversation. In this respect the day could not be considered entirely normal. In view of this tendency to constant expression on the part of the growing child, it is easy to appreciate some of the hardships which fall to the lot of the child when he is put into the typical public school where he is attached to an uncomfortable seat and compelled to sit quiet and silent

for from one to three hours at a time. Is it any wonder that children whisper, talk aloud or write notes in spite of iron-clad rules? Is it any wonder that the innocent, happy, cheerful and open countenanced child starting to school in September comes back in June, shy, indifferent, secretive and lifeless?

Personal Pronouns.—If one should assume as some psychologists have that the use of the personal pronoun is indicative of the development of the *self* concept, then the use of this pronoun in its various forms becomes an interesting topic. Every other sentence, that is, one half of all the sentences the child used during the day, contain the first personal pronoun in some form. The total number of uses of this term for the day was 958, while the corresponding number for one year before was 860. The ratio of first personal pronouns to other words was therefore, at forty months one to exery 13.5 and at 52 months one to every 15.6. One might conclude from this that, while the egoistic tendency is still strong in G, the number of uses of this term being regarded as an index, it is apparently losing some of its relative importance. This conclusion is slightly supported, by the facts concerning the uses of the personal pronouns in the second and third persons for we expect a decrease in the egoistic to be paralleled by an increase in the altruistic tendency indicated by a growth in the "you" and "we" elements. The second personal pronoun was used aproximately 500 times during the course of the day at 52 months of age, or once for every 29.8 words of conversation. At 40 months of age this term is found 375 times in the day's conversation or once for every 31.6 words. Here, then, we find a small increase in the relative amounts of the "you" and "we" elements in the child's speech.

The writer does not feel at all certain as to the significance of these observations. It would be necesary to have considerable more data of a similar nature before attempting much generalization. The child gets its mode and form of expression almost wholly through imitation of the expression of his associates. As the expresion develops in complexity, more and more does it tend to become an exact reproduction of their pronunciation, vocabulary, form and style. There is little in the behavior of the child, aside from the language, at this stage to indicate that the developing use of the personal pronouns is of great significance so far as the growth of egoistic and altruistic tendencies are concerned.

The Terms "Papa" and "Mamma".—The number of uses of these words is a rather difficult matter to determine. It

was thought that by careful study of the uses of the two terms some idea might be gained, first, of the relative importance from the child's viewpoint of the two parents, and second, of the mere amount of attention which the child demands from the parents. Naturally this would vary greatly with different types of children and with different kinds of homes. The first difficulty encountered in our study was the fact that the child does not always use the word *Papa* or *Mamma* when addressing the parent and the second was that she does not always use these words to call for any sort of attention at all. In atempting to make out the relative amount of reference to each of the parents, one is compelled to use his personal judgment in a great many cases. The figures given in the table are therefore, partially an approximation. The words *Papa* and *Mamma* are most frequently used in asking questions and in these cases practically always require a response. Even where the words are not used in sentences or put in the form of questions, a response of some kind is usually expected from the parent. The fact that G calls upon the mother or used the term *Mamma* about forty times an hour during the entire day and on the father only about twenty-seven times per hour suggests that the mother enters much more largely into the mental life of the child at this stage of development than does the father. There are many and obvious reasons, which need not be discussed here, why this should be true. It is altogether probable that were there other children in the family, the child's attention would not be directed to the parents so continuously. In any event this data indicates the almost incomprehensible demands which the child makes upon the parent's attention. It also indicates how intimate is the relation between the parents' mental characteristics and the child's mental development and to what extent the child's mental development and mental status are linked with add molded by its parental environment.

The One-Day Vocabulary

In making up the vocabulary of words used during the day, verb inflections have been listed as separate words, but the names of 43 persons and six places have been omitted. There were 51 of the verb inflections. If these are subtracted, the vocabulary as indicated in the table would be decreased to 901. Including the proper nouns and the verb variants, the total number of different words used is seen to be 999.

At 40 months of age G used 859 different words in the course of a day's conversation. She had at that time a vocabulary of approximately 2500 words; so that she made use of

34% of her available fund of words during the day. At 50 months of age, with a vocabulary of about 4200 words, she used about 1000 different words, or about 24% of her word fund. Thus it is seen that as the size of the total vocabulary increases, the size of the one-day vocabulary increases, but the ratio of the latter to the former decreases. This is what one naturaly would expect.

The following table shows the ratio of the different parts of speech in the one-day vocabulary.

	Number	Per Cent
Nouns	402	42.3
Verbs	292	30.7
Adjectives	113	11.9
Adverbs	72	7.6
Pronouns	31	3.3
Prepositions	20	2.1
Interjections	11	1.1
Conjunctions	9	1.0
Total	950	100.0

THE ONE-DAY VOCABULARY

I. NOUNS

All
all right
amen
animals
anything
arm
apples
automobile

baa
baby
back
band
barber
barn
basement
basket
bath
beans
bears
bed
beater
beef
belts
bit
bites
birdie
blanket
bloomers
boards
boat
body
book
bottle
boy
bread
breakfast
breast
brother
bulldog
bunches
butcherknife
bushel
butter

cage
cake
candy
capitol
care
case
cattlesnake
cellar
chain
chair
chatterbox
cheek
chickens
children
chimney
Chinaman
chocolate
church
cinnamon
city
clock
cloth
coalbucket
coat
cocoa
coffee
cold
corn
cottontail
couch
cover
cow
cream
cream-pie
croup
crowd
cucumber
cup
cupful
cushions

dandelion
day
dear
"dee dil dee"
dinner
dishes
dishpan
doctors
dog
dollie
door
drawer

THE ONE-DAY VOCABULARY—*Continued*

dream
dress
drink
dust

ears
edges
egg
eight
ends
engine
enough
everybody
everything
exercise
eye
eyelid

face
fairy
faucet
feather
feet
fellow
fibs
fight
finger
fire
five
flag
floor
flour
flowers
fly
folks
foot
fork
four
Friday
friends
frogs
front
fun

gentleman
German
Germany
girl
glass
God
godmother
Goldilocks
goodness
good night
Grandma
Grandpa
grapefruit
grapes
grinder
grounds
guns

hair
halfpast
hall
hands
hat
head
"heehee"
hello
hide and seek
home
hook
horse
house
hundred
husband

ice
icebox
icewater

jackolantern
jelly
jellyroll
juice

Kentucky
kind
kitty
knives

lace
lady
lake
lamb
lamp
leg
lemon
lemon-pie
letter
library
lid
light
line
lion
lots
lunch

mail
mailman
Mamma
man
market
match
meal
men
midnight
milk
mince-pie
minute
mistake
monkeys
morning
months
mother
mountains
mouth
muss

name
nap
needle
night
night-cap
nightgown
no
nobody
noise
none
nose
no sir
notebook
notes

oar
one
"oop see daisy"
oranges
order
oven
owls

page
pair
pan
pancakes
pantry
Papa
paper
papers (newspapers)
part
peanut-butter
pen
pencil
people
picnics
picture
pie
piece
piggies
pillows

THE ONE-DAY VOCABULARY—*Continued*

pillowslip
pin
pinchbug
pin-cushion
pipe
place
plan
plate
playland
playthings
pneumonia
pocketbook
porch
powder
priest
pudding
pumpkin-pie

quilt

rabbits
rats
rascal
reason
Red Hiding Hood
refrigerator
review
road
rockingchair
room
room (space)
roses
rye

sandwiches
Santa Claus
satchel
Saturday
school
scissors
screens
secret
see saw
seven
shame
shaver
shears
sheep
sheet
shoes
shop
show
sidewalk
sink
sister
six
sixty
skin
skirt
sleeves
soap
soldiers
some
something
songs
sorts
south
spankings
spinach
spoon
spoonful
squirrel
stairway
statue
stick
stockings
stomach
stool
store
story
stove
stream
street
street-car
stripes
stuff
sugar
soot
summer
sun
Sunday
supper
sweetheart

table
tailor
taste

tea
teeth
things
thread
three
thumb
time
tin
Tipperary
toadstools
toiletsoap
tomatoes
top
towel
town
train
tree
tulips
turns
two
typewriter

"uh huh"
umbrella
university
"uppity"

view
visit
voice

waist
washboard
washdish
watch
water
wave
way
"wee wee"
west
wheat
wheel
while
wieners (weehees)
wind
window
wolf
woodchuck
word
work

yard
year
yes
yes sir

II. VERBS

am
are
aren't
asking
asks

bake
baked
barbared
be
beat
been
began

THE ONE-DAY VOCABULARY—*Continued*

begin
beginning
believe
belongs
bent
bet
bite
blow (trans.)
blow (intrans.)
boarding
borrow
bother
break
bring
broke
broken
burn
buttoned
buy

call
came
can
can't
care
catch
caught
"chair"
"chaired"
changed
chase
chopping
clean
cleaned
closed
come
coming
cooked
coughs
could
couldn't
crawl
crawled
cried
crying
curl
cut

darning
did
didn't
die
do
does
done
don't
draw

dreamed
dreamt
dress
dressed
drink
drop
dropped
drunk
dry

eat
eaten
eating
enjoy

fade
fall
fastened
feels
fix
fixed
fold
folded
forgot
found

gave
get
getting
give
given
go
going
gone
got
grating
guess

had
hang
hanging
happens
has
have
hear
heard
helps
hired
hit
hold
"holler"
hurry
hurrying
hurt
hush

ironed

ironing
is
isn't

jumped

keep
kill
kiss
knock
knocked
know

laugh
lay
laying
leak
leaked
learn
leave
left
let
lift
like
lit
lived
lives
locked
looked
looking
lost

make
making
matter
may
meant
meet
mend
met
mind
move

named
need
needed

open
ought

peeling
pick
planning
play (music)
play
played
playing
please

THE ONE-DAY VOCABULARY—*Continued*

pour
pray
pressing
pull
pulled
pulling
put
putting

quit

rains
raining
read
reading
remember
rest
ride
ring
roaring
rub
run

said
sang
saw
say
scared
scrambled
see
seen
send
set
shall
shopping
should
show
shut
sings
singing
sit
sitting
sleep
slips
smells
sounds
spank
spill
spit
spoiled
sprinkle
stand
standing
started
stay
stayed
step
stop
stuck
suck
sucking
suppose
surprise

take
taking
talking
tastes
teach
tear
tell
thank
think
thought
threw
throw
tied
told
took
tore
touching
try
trying
turn
turned

unbutton
unbuttoned
"unchange"
understood
unhooked
used

wait
waited
wake
walk
walked
walking
want
wanted
wanting
was
wash
washed
wasn't
watch
waving
wear
went
were
whistle
whistling
will
wipe
wiped
wiping
wish
wonder
won't
work
worked
would
wrap
writes
writing
written
wrote

III. ADJECTIVES

A
all
another
any
asleep
awful

bad
beautiful
best
better
big
bitter
black
blue
broken
busy

clean
clear
cloudy
cold
cross
cute

dark
dirty
double
dusty

each
easier
either
every

faster
fat
fine
first
fresh
fried

THE ONE-DAY VOCABULARY—*Continued*

full
funny

glad
good
great

happy
hard
heavy
higher
hot
hungry

kind

last
little
long
longest
loud
lower

many
mean
more
much
mussy

new
next
nice

old
older
open
other
own

pink
"play"
powdered
pretty

real
red
right
rough
round

sad
same
second
shortest
sick
sleepy
sorry
sour

squeaky
still
straight
such
sure
sweet
sweetest

tall
that
the
these
third
thirsty
this
those
tired
true
two

welcome
well
wet
which
white
whole
wilted
worn
worse
wrinkled
wrong

IV. ADVERBS

Again
ago
ahead
all
along
already
anyway
around
as
away

back
bedtime
before
below
besides

down
downstairs

early
else
even
ever

far
fast

half
hardly
here
how

inside
instead

just

like

maybe
mostly

near
never
not
now

off
on
once
only
out
over

partly
past
pretty

quicker
quite

rather
ready
really

so
sometime
somewhere
soon

than
then
there
through
throughout
today
tomorrow
tonight
too

THE ONE-DAY VOCABULARY—*Continued*

up
very
when
where
whether
why

yesterday
yet

V. PRONOUNS

Both

he
her
him
his

I
I'll
I'm
it
itself
I've

me
mine
my
myself

our
ourselves

she

that
their
them
these
they
this

we
what
who

you
you'll
your
yourself

VI. INTERJECTIONS

Achew
ah
glory

my

oh
oh oh oh
ouch

whee
whew
whoo whoo

zuz

VII. PREPOSITIONS

About
across
after
around
at

between
by

down

except

for
from

in
into

of
off
on
over

to

under

with

VIII. CONJUNCTIONS

And
but
cause
if
or
that
though
till
while

SUCCESS-MAKING TRAITS IN COLLEGE TEACHERS

By Clarence C. Church

It needs but slight powers of observation coupled with some little experience in various college lecture and class rooms to teach how great a variety there is in successful college teachers. In physique inspiring teachers vary from insignificant and even puny men to herculean-like males. In bodily conformation a few are excellent, a few are ugly, the rest somewhere intermediate. A professor is sometimes described as handsome, perhaps more commonly he is described as somewhat queer. Most teachers, in college at least, possess so-called mannerisms, noticeable peculiarities of posture, gesture, speech, or ways of talking. *Once in a while* one sees a superb lecturer of classic type, who unperturbed runs smoothly along with his periodic sentences and artistic rhetoric, getting to the logical end of his subject just at the end of the hour. The degree and sort of discipline maintained by those who are successful in putting over their subject-matter and habits of thought is different with almost every instructor. Moral, intellectual, and social habits present no uniformity in the different individuals of a college or university community. Finally it must be admitted by observing pedagogues that every man has his own method, or way in which he tries to run the learning processes of his pupils.

Let not undersized intellectual youth be discouraged lest they cannot succeed in college teaching; just as the short-of-stature Napoleon was a great general, so some of the most popular and successful teachers of today are men whose intellectual and inspirational magnitude is in inverse proportion to their frail frame and small avoirdupois. Standards of attractiveness in men are never very well established in the popular judgments, but there are always men who, casual observers contend, make an unfortunate appearance, yet some of these in college chairs are remembered gratefully by many devoted former students. Some men of the most notorious ugliness of body have been obliged to flee, for efficiency's sake, from their numerous women admirers; if ugliness may not be a handicap with the favorable attentions of the other sex, should it be badly feared in the less personal and quite calm associations of the college class?

Mannerisms are generally a bug-bear in the apprehensions of those who aspire to public or professional popularity, and doubtless, other circumstances equal, they often injure, yet they are, notwithstanding, sometimes adopted along with a pose and become secrets of popularity. Some admired teachers are always awkward, not knowing, for instance, where to keep their hands or being able to stand except on one leg, and though this may be annoying to those who first sit in the lecture hall, perhaps later it comes to be part of the expected and appreciated formal behavior of the men so facile with thought. The old-time professor might neglect to change his tie for weeks or he might wear the wrong suit to class; if proprieties are more rigorous nowadays they do not preclude a certain amount of neglect of personal appearance by men whose thoughts are on time and eternity, or germs and electrons; whose business it is to know, and to vend truth and science. Especially in teachers of the humanities an artfully quaint appearance may be at a premium—if only one's quaintness happens to hit the right cord in the foibles of possible admirers. It does a man little harm to be gently smiled at because of his eccentric ways, if only other redeeming qualities save him from being thought ridiculous. A conventional appearance saves a teacher worry for fear that some superficial mind will rate him for unfavorable non-essentials, but at the same time mild unconventionalities may be appreceived as salt and flavor by the same superficial appraisers.

There are successful teachers who gesture with their whole body, or who contort it more or less into an unnatural position as they talk. A wise look or an unmeaningful smile when adopted as a pose are not generally interpreted as conceit or hypocrisy, rather they seem the expression of a good personality.

The so-called nervousness of those who cannot keep hands still or face straight, who laugh without much excuse, whose bodily unquiet impresses others as evidence of uneasiness may irritate students or side track their attentions, but usually only for a time at first acquaintance, and in time the man who is unconsciously so handicapped, if he has something worthwhile, gets appreciation.

Whether a marble-like excellent of posture is better than unsteadiness and useless self-activity before a class would in the past have been answered quite affirmatively; the classic performance of mental and physical rigor was deemed of itself an art of high intrinsic value. But granting excellent oratorical ability to accompany such placid personal habits, there are spokesmen for the unstable lecturer. The beauty of

his delivery does not get monotonous, while the student of any college capacity is not easily decoyed to attending specifically to the fretful behavior of the men who cannot make his professional into one of a classical mould. There certainly are successful "nervous" teachers.

And old idea of discipline for school children forbade all motions in the room except the speech movements of the teacher and the reciting pupils. Some college ideals are still a good deal like this. And there are successful teachers who without using a particle of force or threat rule order with an iron hand. How the personal tactics and air of the quiet disciplinarians succeed as they do, apparently without any attention, is the despair of those who have tried to run classes with never a whisper and hardly a smile, and failed. Those who succeed unquestionably get glorious results not unfrequently.

And while no one has yet been found to impute a pedagogic value to a lecture room constituted of visiting parties, correspondents, candy-eaters and tobacco users, it is evident that interested students may without harm pass an occasional relevant word about subject matter, relax their bodies for easier inception of ideas, and get into a breezy mental contact with the instructor. A successful teacher always maintains respect from his classes but he does not necessarily maintain silence. Some of the best teachers receive many volunteered illustrations and instances or even general thoughts in the course of a lecture. Strange as it may sound, a certain small amount of relaxed activity in the college class room prevents students from having lapses of attention. The ideal advanced class, graduate class in particular, is of course a Socratic circle. And the Socratic method perfectly applied remains the supremely excellent technic of class management.

Successful college teachers do not necessarily have to set a standard of unflagging intellectual effort. Those who do this create respect for their industry and maybe get credit for more brilliance than they possess. But a halo of worth goes about the man who is brilliant without studying, and if he does not so much inspire admiring students to lives of rarified intellect, he at least is apt to command efficient work. The grind in American college faculties has to win his status by his scholarly efficiency; the careless genius may get his rating largely through extra-scholarly activities, the interest in which will perhaps make more efficacious his professional teaching.

When looking for types of social behavior in college faculties we certainly discover the following: there is the human ice-berg who always knows what to say in his class room and

when he has on a dress suit, and refrains from saying anything at other times. His etiquette is unimpeachable, his grammar perfect, his smiles unwasted. He associates with his students, and with most other people, across a frigid social gulf, and as students never come to him except on business his college work is ended when his classes are over, unless there are formal evening entertainments. The caste of such a man is generally high, and if he handles indelicate subjects it protects him.

At the other extreme in sociability is the informal social democrat, always approachable, always intelligently talkative, humanly wise, ready to receive any communications and sympathize with any heartaches. His manners are apt to be careless, and formal receptions bore him until he disturbs or avoids them. He makes a less grand figure, but he is especially attractive as a companion to the more individuated and refined students. Much of his time is likely to be consumed by visits, some of which are not very profitable to any one. Though likable, he is in danger of loosing caste, yet this will generally revive when his human character gets better known.

There is also the rather formal but nevertheless very adjustable type of professor, the one who is always into everything, a stock committeeman, interested in athletics and social service, an attendant at church, and at college dances and a good sportsman as well. He always knows everyone, but rather superficially so. He is a "good scout," not a spiritual adviser.

Besides these three types of social characters there are very numerous mutuants and blends of them. All are represented among good teachers. And all, of course, have some times failed to get much favorable recognition. There is no indespensable social quality in a teacher.

Even in the morals of good teachers relativity prevails. It is true that great latitude is allowed only in a few large universities, and there an open breach of sexual morality, if it becomes public, may mean immediate professional downfall, though as several recent instances show, not great loss of standing with former pupils. The old standard which laid out a single straight and narrow path for teachers has crumbled almost everywhere, and it is recognized by apreciative pupils and colleagues that there are different ways to be good, and, even, that once in a while a heroic defiance of certain existing mores is as redeeming as unerring commonplace goodness. Devotion to moral ideals is a great asset in those who would be beloved teachers—witness noted current instances,—but despite this, several teachers who are now exert-

ing really the maximum possible influence and have the greatest bodies of devoted disciples, have shown devotion to the truth ideal only, disclaiming all moral concern. It is true that this type seems to require a rather specially prepared social medium, i. e. a large university before it can find nourishment.

As the scientific ideal has come to reign, and it has been thought better to consult fact than to give advice, there has arisen some popular dislike for preachers. Hence there are numerous college teachers who *do not preach,* but confine themselves to teaching and investigating.

For a long time method has been the object of both scientific inquiry and speculation. And with the multitude of different species of method there has been much experimentation. Therefore, one uninformed might imagine that proper specific methods for particular student groups have been discovered. This does not appear to be true for elementary education, and it certainly is not true for collegiate education. No one can say in a given case that some particular method is the only one to use. Given any actual class there appear always to be various procedures by which the learning process can be encouraged to start and continue.

One man will make a success of deduction, of texts and lectures which proceded from fundamental theory to its concrete implications; another's expositions procede in reverse order to this; each inculcating good habits of inquiry and thought, as well as a respectable store of ideas. Sometimes a systematic teacher is regarded as brilliant, and he makes good students; a teacher who has no system is also regarded as brilliant, and he has good students. Some teachers lay off their subject matter elegantly with complete inattention to the particular mental contents of the learners, while others think that in college as elsewhere some attention should be given to the *appreceptionmasse,* or to the background of ideas, in the students. Both may get good results. There are lucid instructors who use abundant concrete illustrations and there are obscure, if profound, instructors who deal in abstractions. The former makes fewer demands on thinking and associative powers, but both disseminate their notions. Some lecture, some use texts; some require careful notes, some furnish them beforehand typewritten. And so the multiplicity of working methods prevails.

We have proceded far and comprehensively enough to give a good protrayal of the variety of traits found in succesful advanced teachers. Anyone who wishes further data can get it by visiting college lecture halls.

It cannot be said, offhand, that any particular trait, habit or art is the cause of a teacher's succes. He may be succesful only in spite of, not succesful through or because of it. It is often hard to determine whether a trait is an asset or a handicap. But such a doubt does not alter the frequent fact that the in some ways unpromising teacher succeeds, and often in a marked measure. It can safely be said that a man can hardly be cursed with any particular apparent defect or variation but that *somewhere,* granting other redeeming qualities, he can become an inspiring teacher.

The question arises, however, whether for a certain community and school there is not an ideal combination of personal and professional traits, which when possessed by a man guarantee the greatest measure of success. We assume that no one will take the next speculative step and ask whether there is such a thing as an ideal teacher, suitable for *any* community. Of course there are personal traits and habits and ideals which would splendidly fit in certain communities, especially rather provincial ones, but would not be assets in many other places.

But it is an open question whether one can describe an ideal professor for a given college class, say nothing about a college. Furthermore, individual students may be potentially adjustable in the happiest way to a number of types of men—indeed, is this not often the case, where a student likes all the members of the faculty for their different qualities and finds the variety valuable? There are, on the other hand, always some students who can not get into sympathy or cooperation with certain teachers. Everyone finds certain persons in life who are not agreeable, and a variety of others who are each in his or her own way congenial. And it is a misfortune to students when they get in the class of a man whom they "cannot get," do "not like," or have strong prejudices against. They may learn from him whether they like him or not, but they are in a poor state of mind to do so, if they remain hostile. Of course they may eventually, by self-adaptation, learn to like him.

The spirit of a class and community count for much in questions of popularity, and professional adjustment. If a man comes well recommended and with the right affiliations, his caste is good, and it obscures his defects to potential detesters. The favorable opinion of a majority of the students may be contagious with the reluctant minority, and a leader may swing a whole class in either direction, sometimes. A favorable tradition once established protects a man in large degree. Accidents and luck, uncalulable circumstances, always count for much as to how a man shall be liked; if by an unwitting

accident or mistake he antagonizes a few sensitive students, or faculty members, he may have a nest of enemies who will capitalize any behavior that would anywhere be considered as erring, and use this as tools with which to undermine him. Some persons take a feral delight in exerting their power and skill for destroying another man, especially if he be in any sense a rival.

In every community there are particular standards or customs or ideals which lend a man prestige and appreciation when he subscribes heartily and sincerely to them. It may be that a combination of orthodox church-going, amateur dramatics, giving good advice, and palid conversation are as a group in vogue. If a man will make himself enthusiastic about one or two of these and be tender but inactive about the others he will stand a good chance of "being in well." Whatever one's defects are these do not hinder him from lending his support to some of the group of popular activities. But if he pursues his own tastes to the entire exclusion of the popular ones his way is likely to be hard. In another community altogether a new group of activities may be in vogue. And in a large university the matter of being popular in the community at large does not appreciably count,—that is, only the exigencies of his teaching and student and faculty associations militate for or against a man's security.

It stands to reason and observation, also that a teacher may be undone in a particular position, and in some succeeding ones, by a single powerful enemy. He may be dismissed on a trumped up charge, and find it hard to get a position again. As fortune will have it the gifted man sometimes goes under with these circumstances; the handicapped one may by tact and favor succeed.

There are doubtless men of high intellect and ability who can never succeed as teachers, who always fail to interest and inspire students. One of these may try twenty universities, and if he does not kill his chances by lack of tact, some agency eliminates him because of some trait that has seemed to it, in its authority, unlikely. But there are few men so forsaken of academic charms as to make their uprooting anywhere a matter of destiny. Most would succeed if they could try long enough—some of course much easier than others. Finally, most popular men would be in a degree unpopular under certain new circumstances but slightly different from their present ones, but a few adaptable ones would make their way in many different evironments with comparative ease.

In conclusion: success making popularity in college teachers, like popularity in persons elsewhere, is really a subtle

thing, and very complicated. But it is not such a phenomenon but that most mentally capable persons could not succeed in attaining it, were they able to make a fair number of trials. Traits and methods which are generally supposed to work unfavorably, also, often work favorably as conspicuous cases show.

This paper has dealt with success-making in college teachers. The same principles must apply to secondary and grade schools, but probably with less latitude. Greater *relative* conventionality is required in the lower schools, but there is still room for variation.

In the schools of a democracy teachers need not be all of the same mould. Success is liberal to the variant.

A STUDY OF THE SLOW AND OVER-AGED CHILD

By Robert P. Brooks

"There are misfit schools, misfit texts and studies, misfit dogmas and traditions of pedants and pedantry. There are misfit homes, misfit occupations and diversions. In fact, there are all kinds and conditions of mitfit clothing for children but—in the nature of things there can be no misfit children."[1]

We may accept the principle that there are no misfit children, yet we all know that we have pupils who are constantly demanding more attention than the ordinary child. These are the ones who are making teaching burdensome to the teacher; who are taking much time from the normal and bright children and yet they persist in lagging behind the rest of the class. They, as a rule, dislike school. They comprise a very large per cent. of the disciplinary cases of the class and school. They are slow in their work and are over-aged. We all recognize them. We all have them. We do not always know all of them.

These are the children who refuse, for reasons of their physical and mental make-up, their environment, their birth conditions, development, heredity, etc., to be planed and compressed into the same molds as their fellows—the "average" normal and bright children. They are misfits in *this* sense and in only *this* sense. They are different from many of the other children. They must have attention. It is a matter of history that Hawthorne, Scott, Froebel, Wellington, Webster and Sir Isaac Newton were children of this class.

The Purpose of the Study

The purpose of this study was to discover how serious a problem this type of child was in school; (2) to better adjust the school to these unfortunates; (3) and, as far as possible, to minimize the number of misfits in the future.

History of the Study

This problem of over-age along with slowness was little thought of in America until about 6 or 8 years ago. However,

[1] Fred. Burk. Report of San Francisco Normal School Monograph C, "Individual Instruction."

as far back as 1872, Doctor Harris was awake to the fact that there were many misfits in the schools of St. Louis but the educational world was not then ready for this study. Practically no thought was given to this problem in our Public Schools until 1904 when Superintendent Maxwell brought it to the public. Little was done in New York until seven years later when he stated to the Principals of that city that, "every child is entitled to all the education that he is capable of receiving." . . . . also, "that the greatest possible number of children should be made ready for promotion with fairly good preparation at least."[2]

This same year, 1911, Dr. Leonard Ayres made an exhaustive study of the problem of over-age and slow progress in twenty-nine representative cities of the United States.

In practically all of the recent surveys this problem has been considered. Many educational authorities declare that it is one of the most pressing problems for Administration at the present time.

Means of Approach

There is entire agreement, I believe, among Educators as to the seriousness of the problem resulting from the presence of over-age and slow children. There has been considerable disagreement as to the methods of identifying and locating such children.

Since the study made by Dr. Ayres in 1911, it is pretty generally conceded that we need to use both the age and the progress standards. We need to use both of these standards, for we find that, on the average, the slow children are as numerous as the over-aged ones, but we have discovered also that the two groups are in a large part made up of different individuals.[3]

In this study, those pupils who are both over-aged and who have made slow progress are defined as "Misfits."

Data for this Study

I selected Grades Three to Six-B inclusive for this study. I began with the Third because this is the grade where our non-promotions first begin to be seen to any considerable degree. I ended with the Six-B because that is the highest class in the school.

Three hundred seventy-one pupils were classified according to the age and progress record used by Ayres, with the result that 54 pupils were found to be slow and over-aged.

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[2] How to Help the Backward Child. W. H. Maxwell, 1911, Address to Principals.

[3] The Identification of the Misfit Child. Leonard P. Ayres. p. 12.

Causes of Retardation

The chief causes of laggards are: (1) late entrance (this, however, was not an important factor in this school); (2) irregular attendance; (3) physical defects; (4) mental defects; (5) courses of study not adapted to children and made out largely to fit the bright child; (6) inflexible grading; (7) bad environmental conditions.

It has been my purpose to discover, as far as possible, the most glaring defects in our school management which has had a tendency to aid other causes in developing misfits. We have investigated the conditions existing in many of the homes of these unfortunates. We have tested all to discover their mental status. We have examined all quite thoroughly for physical defects.

After considerable study of the group as a whole, I have eliminated from the group twenty-eight pupils. Seven of these left to go to work or were transferred. Ten were retarded mentally and chronologically only one year and this retardation was largely due to late entrance. Seven were retarded either by irregular attendance due to sickness, frequently changing of schools and by considerable attendance in parochial schools. Four cases seemed so slight that they were not pressing.

This elimination leaves twenty-six pupils for further detailed study. Seventeen of these have been placed in an ungraded class for observation and nine are in regular classes.

Remedial Measures

School Management

We have found that our problem is much less a matter of late entrance than the progress through the grades.

The young pupils, that is, those entering school before the age of six, have made the most rapid progress and the highest percentage of normal progress.

It is a fallacy that the child entering late catches up with the one who begins early. This is only in rare cases. We have found that the best age for entering the Kindergarten is at five and the First Grade at six. Pupils who enter earlier are too immature as a rule and usually fail at about the Third Grade and ofttimes are obliged to remain in the Third Grade from 1½ to 2½ years.

Special Classes

I have organized two classes for special pupils. One is a class with a maximum capacity of fifteen pupils who are

feebleminded in various degrees. This class has been organized for several years. It is our policy to receive pupils in this class who are two or more years retarded pedagogically and also mentally if their chronological age is between eight and nine years; also those who are retarded pedagogically and mentally three years or more if their age is between ten and twelve years.[4] We often find children who are very backward in their school status and who, measured by intelligence tests, are quite normal. It is our purpose to exclude these from our special class for the feebleminded.

We believe that the feebleminded child, i. e., those below the Middle Grade Moron, should remain in the class only a sufficient time for his condition to be accurately diagnosed, or until a place can be found for him in a suitable institution. The influence of these low-grade defectives on the high-grade defectives is as bad as the influence of backward and high-grade defective children on normal pupils of a regular class. The public school is no place for the education of the feebleminded below the Moron Grade at least. The presence of low-grade defectives in the majority of the special classes in our public schools is accountable for the little educational value of these classes, in many instances.

In our opinion, the chief objects of the class for defective children is to give them such training that will lead them to be happy, self-respecting and self-supporting. With these ends in view, we have divided our work into three classes, viz., Academic, Physical and Manual. We regard the first by far the least important for we have found that our pupils do only "parrot work" in the 3 R's. They cannot apply their knowledge. A boy may have a reading vocabulary of 200 words, but he will not pick up a book and attempt to read it. A girl may know her tables, but when she is asked to solve a one-step problem in multiplication, she is all "at sea."

The physical side consists of gymnastics and games and marching.

We have a Victrola which we use for furnishing music for marching for gymnastics and for folk dancing.

The manual side of our work has been very productive and the results in this work for the past year have been most gratifying.

In the first five months of this school year, this class has made and sold $118 worth of reed baskets and trays varying greatly in style; it has caned 72 chairs valuing $42; made and sold six dozen floor and hand brushes. Besides these, the

[4] See Stern & Whipple. The Psychological Methods of Testing Intelligence. p. 78.

pupils in this class have woven several rugs, 30 x 54". The girls have made aprons, table mats, tam o'shanters, boudoir caps and slippers. Last year they sold to the board of education a trial order of $180 worth of brushes. A few days ago we received word from the board of education that they will take all of the brushes that we can make in the remainder of the year.

A visit to the class would convince one that the pupils are happy. Under the influence of a very exceptional teacher, they are becoming very self-respecting. That they are becoming fast self-supporting is readily seen by the great amount of initiative and ability in independent work. Several of the boys are caning chairs at home. A local brush factory offered to employ the boys, who make brushes, in the summer and would take them at once but for the Compulsory Attendance Laws. We are teaching them to save their money through the school savings bank and we have been very successful in this endeavor.

The Ungraded Class

The other "special class" is the ungraded class designed to accommodate a maximum number of twenty pupils, who are backward and "peculiar." It is in this class that I placed seventeen of the most pressing cases of the 54 misfits. In this class, we are observing them and are trying to bring some of them up to grade that they may be returned to the regular classes; others will be given special training that will enable them to secure working papers; others will be kept until there is room for them in our class for defectives.

The teacher of this class is not confined to any definite amount of work to be covered. Her work is to study her pupils—find out whether they are defective or backward, find out whether they are handicapped by any physical or neurological defect, whether they have been hindered in school progress by environmental conditions, through heredity, severe illness, etc., etc. The essentials of the most important subjects are taught with considerable emphasis on manual work, including cooking, cleaning, sewing, darning, weaving of rugs, mats and baskets, caning of chairs, brush making, making of paper flowers, hammocks.

Classes of this type are expensive and probably at first thought the value may not seem to be commensurate with the cost.

The monetary costs of these classes are only one small item. We are fully aware of the disastrous results arising from having repeaters left in regular classes. These repeaters—chronic repeaters, if they may be so termed—lose interest and

self-confidence and usually soon form the habit of failing. Most of the extreme cases cannot be brought up to grade, but these unfortunates can get much more profitable training in ungraded classes than in a regular grade class. We know how this type clog the educational machine, how much of the teacher's time they consume, how they pull down the standard of achievement of the other children and become themselves disheartened and dejected or else hardened and apathetic. These usually become the individual drags on the road to vice, pauperism and crime after they leave school.[5]

"Classes for children who require a little special helping to bring them up to grade or to normal standards, as to help them over some temporary difficulty, are among the wisest and most helpful expedients in our public school policy."[6]

Flexible Grading

We have semi-annual promotions. In so far as possible, we group our pupils into classes which will contain those having approximately the same ability, e. g., if we have two 5-B's, one will contain those pupils who are able to do the maximum amount of work and the other will contain those whose abilities are not so great and who work slower. Within the classes the teachers group their pupils into the quick-bright and the slow-dull divisions. Any pupil having the ability to do a higher grade of work than that done in the grade in which he is a member, may be promoted at any time regardless of some of the facts of the grade which he has not yet mastered.

Visiting of Homes

The teacher of the ungraded class has visited the homes of many of her pupils and has been helped very materially by those visits in the better understanding of her pupil's peculiarities and handicaps.

Mental Tests

The Binet tests were given to the 54 misfits by one who has had considerable training in giving tests. We found by these tests that many of these pupils test normal, or nearly so. Nine tested from two to three years below normal; eight from three to four years below normal; five tested between four and five years below and two tested five years below.

[5] Portland Survey; Medical Inspection. L. M. Terman.
[6] The Training of the Defective Child. H. H. Goddard.

Physical Examination

All pupils have been examined by the school physician to discover any defects of sight and hearing, nose and throat obstructions. The cases needing attention have been attended to in most cases in hospital clinics.

One child has been treated for hyper-thyroidism. Several have procured glasses. One girl has had tonsils removed. Milk is being furnished in school for those whose physical condition is in a low state. Several are receiving medical treatment for organic disorders.

Value of this Study

As a problem in administration, outside of direct beneficial results to individuals in the school, the greatest value of this study to me has been that of having the interests of the unfortunates in mind. I believe we too often are so concerned with the machinery of the school that we consider too little those among us who are much in need of our attention, thought and sympathy.

SHOULD STUDENTS RECEIVE CREDIT FOR RECREATIONAL PURSUITS?

By LeRoy Arnold

When Woodrow Wilson was President of Princeton, he made the observation, now well nigh proverbial, that the side shows were usurping the place of the main circus in American college life. Student activities outside of the classroom are rapidly on the increase. Some see in this tendency the beginning of the end, others the end of the beginning.

The war has brought to a focus the clash between traditionalists and futurists. At the same time, the desire for co-operative efficiency is superseding petty academic disputation. How best can our educational system serve the nation? That is the question paramount. Corollary: how best can we systematize our education? In high schools long since, and now in colleges and universities, the old curriculum is giving place to a new one. Many educators view the situation with the gravest alarm. Have we lost the classics? Are we to have nought but vocationalism? Further, are we now to lower the bars entirely and to grant credit to students while they play? Has it come to this? Why do some of our best institutions give academic credit for playing in a college band? The Secretary of the Faculty of Arts and Sciences of Harvard writes, "Harvard University does not base its degrees on such work as students may take for their amusement." On the other hand, the University of California, ranked with Harvard in the first class by Dr. Kendrick C. Babcock of the national Bureau of Education, grants credits for athletics and dramatics, debate and practice in music and art,—all, to be sure, under faculty supervision. Conservative and radical tendencies are by no means confined to the Atlantic and Pacafic coasts. Extracurricular activities are not honored as credits toward graduation at the University of Wisconsin, although gymnasium work and military drill are required of Freshmen and Sophomores. On the other hand, the University of Nebraska, also with Wisconson in the first class of Dr. Babcock's list, offers a maximum of one hundred and thirty-two credits in so-called extracurricular subjects, with one hundred and twenty-five the total required for graduation.

To be sure, no one imagines that the University of Nebraska graduates a student who passes nothing except work in gymnasium, football, track, music, glee club, band, chorus, dramatics and art; and yet the statistics from the Registrar's office give color to such a fantastic possibility. Harvard and California, Nebraska and Wisconsin are extremes, but the surprising fact is that some of these so-called extracurricular activities are recognized by ninety-seven out of one hundred representative colleges of our country.

Should students receive credit for recreational pursuits? Whether or not they should, they do. The inconsistency with which the large number adopt some and reject other pursuits shows the need of an investigation, not merely for the sake of bringing into the open what has become the prevalent custom, but also for the purpose of determining, if possible, some underlying principle. Accordingly the following questionnaire was sent to some hundred of our representative colleges:

1. How many semester hours, including "extracurricular" credits, do you require for graduation?
2. How many in gymnasium work are required for graduation?
3. How many credits, if any, are granted for gymnasium work?
4. For football? 5. Baseball? 6. Basketball? 7. Track?
8. Other forms of athletics?
9. How many credits are granted in the history or theory of music? 10. In the practice of music?
11. How many credits, if any, for participation in the glee club? 12. Band? 13. Other musical organizations?
14. How many credits for participation in dramatic productions? 15. For debate outside of the classroom? 16. For oratory outside of the classroom?
17. For editing a college newspaper? 18. Magazine? 19. Other publications?
20. For the history or theory of art? 21. For the practic of art?

The wide spread interest in these questions is evidenced by the hearty response. To one hundred and fourteen inquiries one hundred and five answers have been received, a surprisingly large percentage. Many replies have come in the form of detailed letters, accompanied by catalogs. There are numerous requests for results. The reason for this interest is ap-

parent: it is the urgent need of the hour, felt by faculties and students alike, to concentrate on the things which are worth while.

A word as to the mailing list. The basis is the list made by Dr. Babcock of the national Bureau of Education. Our list includes all of the colleges which he put in the first and second classes, together with a few others added by a committee for various reasons. Technical and scientific schools are excluded and only the colleges of liberal arts of universities are considered. All of the best known and a few of the less known colleges were included, and 92% of them replied. The result, whatever one may think of omissions and commissions, is fairly representative of the colleges of the country. All of those replying, together with the answers to the first segment of the questionnaire, are as follows:

TABLE I: PHYSICAL EDUCATION

(A Number Indicates the Number of Semester Hour Credits Offered or Required.

When Two Numbers Are Given, the First is for Women, the Second For Men.

A Star Indicates That Some Credit is Offered or Required.

A Dagger Indicates That the Subject May be Substituted For Gymnasium Work.)

Institution	Total Credits	Gym. Req.	Gym. Max.	Foot Ball	Base Ball	Basket Ball	Track	Other Athletics
1. Albion	120	*	..	..	..	..	..	..
2. Allegheny	120	*	..	†	†	†	†	..
3. Amherst	*	*	..	..	..	..	..	..
4. Baker	120	4	..	..	..	..	..	..
5. Barnard	124	4	..	..	..	..	..	†
6. Bates	122	*	..	..	..	..	..	..
7. Beloit	124	8	2	..	..	..	..	..
8. Boston	120	1	2	..	..	..	..	..
9. Bowdoin	120	12	12	†	†	†	†	†
10. Brown	120	*	..	..	..	..	..	..
11. Bryn Mawr	120	*	..	..	..	..	..	..
12. Butler	120	8	..	..	..	..	..	..
13. Carleton	126	6	6	†	†	†	†	†
14. Clark	120*	12	..	..	..	..	..	..
15. Coe	124	4	4	†	†	†	†	†
16. Colgate	136	4	..	..	..	..	..	..
17. Colorado	126	6	6	..	..	..	..	..
18. College of City of N. Y.	128	2	..	..	..	..	..	..
19. College of Wooster	124	2	4	†	†	†	†	†
20. Columbia	124	4	4	†	†	†	†	†
21. Cornel College, Iowa	124	4	4	..	..	..	..	..

TABLE 1. PHYSICAL EDUCATION.—*Continued*

Institution	Total Credits	Gym. Req.	Gym. Max.	Foot Ball	Base Ball	Basket Ball	Track	Other Athletics
22. Cornell University	020	12	16	..	..	..	..	..
23. Dakota Wesleyan	120	..	..	..	..	..	..	..
24. Dartmouth	123	1	1	..	..	..	..	..
25. Denison	124	4	..	..	..	..	..	..
26. DePauw	124	4	4	..	..	..	..	..
27. Dickinson	134	6	..	..	..	..	..	..
28. Drury	124	*	..	..	..	..	..	..
29. Georgetown	120	*	..	..	..	..	..	..
30. Goucher	120	*	..	..	..	†	..	†
31. Grinnell	120	8,4	..	..	..	..	..	..
32. Gustavus Adulphus	130	6	..	..	..	..	..	..
33. Hamilton	*	*	..	..	..	..	..	..
34. Hamline	122	2	2	..	..	..	..	..
35. Harvard	*	..	..	..	..	..	..	..
36. Haverford	132	4	4		..	..	..	..
37. Hobart	120	*	..	..	..	..	..	..
38. Holy Cross	*	..	..	..	..	..	..	..
39. Illinois Wesleyan	128	..	..	..	..	..	..	..
40. James Milliken	130	*	..	†	†	†	†	†
41. Johns Hopkins	125	..	..	..	..	..	..	..
42. Kenyon	128	..	..	..	..	..	..	..
43. Knox	124	4	4	†	†	†	†	†
44. Lafayette	*	2	2	..	..	..	..	..
45. Lake Forest	*	4	4	†	†	†	†	†
46. Lawrence	120	4	..	..	..	..	..	..
47. Lehigh	*	4	4	..	..	..	..	..
48. Leland Stanford, Jr.	120	*	..	..	..	..	..	..
49. Macalester	127	1	1	..	..	..	..	..
50. Middlebury	123	3	3	..	..	..	..	..
51. Morningside	120	12,8	..	..	..	..	..	..
52. Mount Holyoke	120	6	..	..		..	..	
53. Municipal Univ., Akron	128	2	2	†	..	†	..	..
54. New Hampshire	132	6,0	8	..	..	..	..	..
55. New York University	126	4	4	..	..	..	..	..
56. Northwestern	120	..	..	..	..	..	..	..
57. Oberlin	*	2	..	..	..	..	..	..
58. Ohio	120	*	..	..	..	..	..	..
59. Ohio State	*	4	4	..	..	..	..	..
60. Princeton	126*	6	..	..	..	..	..	..
61. Pennsylvania State	130	2	2	..	..	..	..	..
62. Radcliffe	*	..	..	..	..	..	..	..
63. Reed	*	*	..	†	†	†	†	..
64. Rutgers	136	..	..	..	..	..	..	..
65. St. Olaf	126	6	..	..	..	..	..	..
66. Swarthmore	124	..	..	..	..	..	..	..
67. Smith	120	4	4	..	..	..	..	
68. State University of Iowa	125	4,2	4,2	†	†	†	†	†
69. Syracuse	124	4	4	†	†	†	†	..
70. Trinity	120	4	..	..	..	..	..	..
71 Tufts	122	2	2	..	..	..	..	..
72. Union	*	..	..	..	..	..	..	..

TABLE I. PHYSICAL EDUCATION—*Continued*)

Institution	Total Credits	Gmy. Req.	Gym. Max.	Foot Ball	Base Ball	Basket Ball	Track	Other Athletics
73. University of Arkansas...	134	4,0	8	2	2	..	..	..
74. University of California..	*	8	9,5	..	..	4	4	6
75. University of Chicago....	*	*	..	..	..	..	..	..
76 University of Cincinnatti.	124	4	..	..	..	..	..	..
77. University of Colorado...	122	2	2	..	..	..	..	..
78. University of Denver....	124	..	4	†	†	†	†	..
79. University of Illinois.....	130	3,2	7	..	..	..	..	..
80. University of Kansas.....	120	10	..	†	†	†	†	†
81 University of Maine.....	125	1	..	..	..		..	..
82. University of Michigan..	120	8,4	..	†	†	†	†	..
83. University of Minnesota.	120	*	6,4	..	..	..	..	..
84. University of Nebraska..	125	4,0	8	4	..	..	2	..
85 UniversityofNorthDakota	125	3	5	†	†	†	†	1
86. Unive sity of Oregon.....	124	4	4	†	†	†	†	1
87. University of Rochester..	124	4	4	†	†	†	†	..
88. University of So. Cal...	124	4	4	4	4	4	4	..
89 UniversityofSouthDakota	128	..	..	..	..	..	..	..
90. University of Texas.....	120	12,6	..		..	..	..	..
91. University of Vermont...	142	*	..	..	..	..	..	..
92. University of Virginia....	*	..	..	..	..	..	..	..
93. University of Wisconsin..	*	*	..	..	..	..	..	..
94. University of Washington.	120*	8	8	..	..	..	..	..
95. Vassar.....	111	*	..	..	..	..	..	..
96. Vanderbilt.....	128	*	*	..	..	..	..	..
97. Washburn.....	120	10	..	..	..	..	..	..
98. Washington and Lee.....	126	6	..	..	..	..	..	..
99. Wesleyan.....	120	*	..	..	..	..	..	..
100. Western Reserve.....	125	3	3	..	..	..	..	..
101. West Virginia.....	128	..	6	†	†	†	†	†
102. Wellesley.....	118	2	2	..	..	..	..	..
103. Wells.....	116	*	..	..	..	..	..	..
104. Williams.....	124	..	..	..	..	..	..	..
105. Yale.....	120	..	..	..	..	..	..	..

The total number of credits required for graduation, exclusive of gymnasium work, in the majority of institutions, is something like one hundred and twenty. If it were feasable for all American colleges of liberal arts to adopt the semester plan, with, approximately, the one hundred and twenty hour credit, this standardizing of the grades would facilitate the systematizing of the higher education.

GYMNASIUM WORK

The negative grade for gymnasium work is one of the anomalies of our educational system. Gymnasium work, or its equivalent in physical training, is regarded as an essential

by the great majority of our best colleges. Only the ultra-conservative offer culture for the mind, at the expense of body and soul. Indeed, as yet, there is very little attention paid to the soul—except in Tagore's school in India—but that is another question. The body is now receiving the attention it deserves: 83% of our colleges require gymnasium work of all their students, while in 86% of them it is either required or elective. Only 12%, however, offer electives for credit. Moreover, in the majority of cases, no credit whatever is given toward graduation, although the student is required to attend gymnasium classes for one or two years before receiving his diploma. Why no positive credits for required gymnasium work? Would it not be logical to grade floor work in the gymnasium as *excellent, good, pass, condition, or fail?* To one who knows the psychology of the student, the resultant improvement would seem inevitable. Perhaps one reason why gymnasium work is irksome to many is because it is forced upon them, with no recognition by way of grades. The faculty now virtually says to the student: "You must do this gymnasium work. If you do it well, you get no credit for it. If you do it poorly, that will not affect your general record. The only thing that we demand of you is that you attend the class." Physical training is a comparatively new subject. It has slipped into the old curriculum, but is still not recognized as of positive educational value.

The women's colleges, with the exception of Radcliffe, require physical training of all students. Gymnasium work is generally supplemented by outdoor sports, folk dancing, and the like. At Mt. Holyoke, for example, gymnasium work, required of every student for the first three years, is supplemented by systematic out of door exercises.

Football and Other Athletics

It is surprising to find that twenty-seven colleges (26%) give some form of credit to those who enter football or other athletic contests. True, twenty-two of them merely allow football or other games to be substituted for gymnasium work, usually in season. Columbia, for example, credits half of each semester's work in football, baseball, basketball, track, or other athletics to practical gymnasium work. At Barnard, athletics, swimming and dancing can be substituted for gymnasium work, while at Goucher the hundred and sixty hours of gymnastics required of every woman includes swimming, folk dancing, hockey, basketball and walking.

Very few colleges give credit for athletic contests as though they were academic courses. At the University of

California they actually are academic courses, so scheduled in the catalog, and the instructors are members of the faculty. California grants one-half unit credit for two hour courses in track, Rugby football, soccer, baseball, basketball, boxing, wrestling, fencing, swimming and general recreation. The last named includes handball, tennis, playground baseball, volleyball, basketball, field hockey, golf and cross country walking. There are also advanced courses in boxing, wrestling or fencing, four hours each, with one unit credit. The systematic listing and grading of these courses is a unique acknowledgment of their educational value. One wonders if the climate of California is producing something of the old Greek ideal of physical culture. At the University of Southern California four credits each may be obtained in football, baseball, basketball, and track. At the University of Denver, where no gymnasium work is required, but where four credits in gymnasium work are permitted toward the degree, one credit a semester is permitted in football, baseball, basketball and track, but a student is limited to four of these credits. At the University of Nebraska a theory class in football is granted four credits and a theory class in track two credits. The University of Arkansas has an extraordinary rule. It grants two credits to "letter men" and one to those who have not won their letter.

To summarize: one-fourth of our colleges, directly or indirectly—usually through substitution—grant credit for participation in football and other college sports.

Seventy-three per cent of our colleges grant credit in either music or art; 62% in music and 57% in art. Usually when one is offered, the other is also, but, curiously enough, sixteen colleges offer music without art, and twelve art without music. There are many large departments, particularly among the big universities. The women's colleges all specialize in both music and art, except Bryn Mawr, which has neither, unless one counts two points in the physics of music. Barnard offers twenty-six credits in music and forty in art. "All are rarely taken by one student," the Registrar observes. In those rare cases the student has more than half her work in these two departments. Only a few colleges limit the number of courses in the history or theory of music or of art which may be elected. The majority regard these as they would any others in the curriculum, and, with the possible exception of the arrangement at Johns Hopkins, where credits are accepted from a local conservatory of music, these subjects are not, strictly speaking, extracurricular. Indeed, under proper direc-

TABLE II. MUSIC AND ART

(FIGURE FOLLOWED BY STAR INDICATES CREDIT FOR THEORY AND PRACTICE.

STAR WITHOUT FIGURE INDICATES THAT A NUMBER OF COURSES ARE OFFERED.

Institution	Music	Practice	Glee	Band	Other	Art	Practice
Albion	10	4	..	..	4	3	..
Amherst	6	2	..	..	..	..	..
Baker	21	3	..	..	..	6*	..
Barnard	26*	*	..	..	..	40*	*
Boston	*	*	..	..	..	*	*
Bowdoin	18	..	..	..	..	6	..
Brown	6	..	..	..	..	12	8
Carleton	30*	*	..	6	6	..	..
Coe	*	10	..	..	..	6	..
Colgate	9	6	..	..	..	10	..
Colorado College	4	..	..	..	..	4	..
College of City of N. Y.	6	..	..	..	..	3	..
College of Wooster	10	8	..	..	..	*	*
Columbia	*	*	..	..	..	*	*
Cornell College, Iowa	16	10	..	..	..	8	..
Cornell University	20	14	..	..	*	*	*
Dakota Wesleyan	6	..	..	..	..	2	..
Dartmouth	18*	*	..	..	..	12	..
Denison	10	..	..	..	..	..	..
DePauw	6	..	..	..	..	4	..
Drury	18	4	..	..	..	3	6
Georgetown	24*	*	..	..	..	..	..
Goucher	..	..	..	..	..	8	..
Grinnell	16	..	..	..	..	4	..
Hamline	12*	*	..	..	..	..	..
Harvard	*	*	..	..	..	*	*
Illinois Wesleyan	2	..	..	..	..	4	..
James Milliken	16*	*	..	..	..	32*	*
Johns Hopkins	*	*	..	..	..	..	..
Kenyon	..	..	..	..	..	*	..
Knox	8	..	..	..	..	8	..
Lawrence	4	8	..	..	..	*	..
Leland Standford, Jr.	..	..	..	8	8	..	..
Macalester	32*	*	4	1	..	2	..
Middlebury	12	..	..	..	..	6	..
Morningside	10	..	..	..	..	..	..
Mount Holyoke	14	8	..	..	..	45*	*
New York University	10	2	..	..	..	..	..
Northwestern	20	..	..	..	..	18	..
Oberlin	*	*	..	..	..	*	*
Ohio University	4	..	2	..	..	..	..
Ohio State	..	..	..	..	..	*	*
Princeton	..	..	..	..	..	*	..
Pennsylvania State	4	4	..	..	..	..	1
Radcliffe	*	*	..	..	..	*	*
St. Olaf	12	8	..	8	8	3	..

TABLE II. MUSIC AND ART—*Continued*

Institution	Music	Practice	Glee	Band	Other	Art	Practice
Swarthmore	..	..	..	..	..	8	..
Smith	*	8	..	..	..	*	16
State University of Iowa	22	15	*	*	*	7	26
Syracuse	6	..	..	..	4	2	2
Tufts	*	..	..	..	..	..	..
University of Arkansas	..	..	..	2	..	5	22
University of California	13	20	..	8	8	2	15
University of Chicago	*	*	..	..	..	*	..
University of Colorado	10	..	..	..	..	2	..
University of Illinois	16	18	..	..	..	20*	*
University of Kansas	13	..	..	..	..	6	14
University of Maine	..	..	..	1	..	..	..
University of Michigan	*	12	..	..	..	18	8
University of Minnesota	*	32	..	..	..	..	..
University of Nebraska	16	8	4	12	4	22	24
University of North Dakota	30	8	4	4	4	37*	*
University of Oregon	9	4	..	1	1	..	..
University of Rochester	..	..	..	..	..	*	..
University of So. Cal.	15*	*	1	..	1	15*	*
University of South Dakota	16	8	..	8	8	*	*
University of Texas	..	6	..	..	..	..	..
University of Washington	14	24	..	4	1	*	*
Vassar	24	..	..	..	..	24	..
Washburn	10	..	*	*	*	*	*
Wellesley	30	..	..	..	..	30	9
Wells	*	..	..	..	..	*	..
Western Reserve	6	..	..	..	..	3	..
West Virginia	15	..	..	6	..	..	..
Williams	..	..	..	..	..	*	..
Yale	*	4	..	..	6	*	*

tion, what studies are more appropriate in a college of liberal arts?

There is, however, a tendency to restrict the amount of practical music. The University of Michigan has this rule: "Credit, not to exceed two hours per semester, will be given to students above the rank of freshmen for advanced work in Pianoforte, Organ, Violin, and Singing, taken in the University School of Music, by written permission of the Professor." The restricting of practical music to two credits each semester is also the rule at Smith, Mount Holyoke and the University of South Dakota. The University of Minnesota permits four a semester and the State University of Iowa limits the total to fifteen hours of practical music. "By practical music," says the catalog of the University of Iowa, "is

meant instruction under the direction of a teacher, not individual private practice."

The University of Iowa, it is interesting to note in passing, recently adopted a four-year special course in Graphic and Plastic Arts, leading to the degree of Bachelor of Arts.

In general, then, art or music—usually both, are recognized as appropriate subjects in three-fourths of our colleges of liberal arts, but the practice of music and art is usually restricted, if not eliminated.

Musical Organizations

It will doubtless surprise many that nearly one-fourth of our colleges (21%) grant credit for glee clubs, bands, or musical organizations. Of these the largest numbers—seventeen—give credits to students playing in the college band. The credits are restricted in various ways and only a minimal grade is given, usually one credit a semester. The University of Nebraska, for example, grants one credit a semester to members of its glee club, and Leland Stanford Junior one a semester in band. Of other musical organizations given credits, the favorite is the choir or chorus. Yale, for instance, grants six credits for singing in its college choir, and South Dakota eight. In a few colleges the university orchestra is recognized as having educational value: the University of North Dakota grants four credits and the University of California a possible eight for members of their orchestras. The University of California also gives the same credits to band members. Directors of both organizations at California are members of the faculty. Likewise, at the State University of Iowa credits given in Glee, Band, and other musical organizations are only in connection with regular courses in music. Coe, Nebraska and North Dakota, as well as California and Iowa, are consistent in favoring credits for all three musical organizations.

Thirty-eight colleges (36%) give credit for debate outside the classroom. Credits vary from one to three for each intercollegiate debate.

Only eleven—nearly all of them small colleges—give credit for oratory outside the classroom.

Ten colleges admit that they give credit for plays outside the classroom. Doubtless the percentage is larger, as plays produced inside the classroom are repeated outside.

Carleton restricts the credits for theatricals, band and choir to six, and debate and oratory to six; consequently a student might have twelve of his one hundred and twenty credits (10%) in these extramural pursuits. Leland Stanford has

TABLE III. PUBLIC SPEAKING

(A STAR INDICATES THAT SOME CREDIT IS GIVEN.)

Institution	Drama	Debate	Oratory
Albion	*	2	2
Bates	..	3	..
Butler	..	2	..
Carleton	2	3	3
Clark	..	3	..
Coe	..	4	4
Colgate	..	4	..
College of Wooster	..	3	..
Cornell College	..	*	..
DePauw	*	1	3
Dickinson	..	1	..
Drury	..	2	..
Georgetown	*	..	..
Grinnell	..	2	..
Gustavus Adolphus	..	3	3
Hamline	..	2	2
Lawrence	..	3	..
Leland Stanford Junior	..	*	..
Macalester	..	2	2
Morningside	..	3	..
Municipal University, Akron	..	*	..
Northwestern	..	3	..
Oberlin	..	3	..
Ohio State	1	2	..
St. Olaf	..	2	..
Swarthmore	..	3	..
State University of Iowa	*	*	*
Tufts	..	3	..
University of Arkansas	..	3	..
University of California	*	*	..
University of Colorado	..	2	..
University of Denver	1	1	1
University of Minnesota	..	3	..
University of Nebraska	3	..	..
University of Oregon	..	3	..
University of Rochester	..	2	..
University of Southern Cal	..	1	..
University of South Dakota	..	2	2
Washburn	*	*	*
Washington and Lee	..	2	..

the rule that those who make the debating team have their work count on the regular course, and likewise the State University of Iowa specifies that credits in debate and oratory and dramatics are only in connection with regular courses.

Twenty colleges (19%), chiefly small colleges, give credit for editing the college newspaper—an average of two or three credits, usually only for the editor-in-chief. In addition, the

TABLE IV. JOURNALISM

(A Star Indicates That Some Credit is Given.)

Institution	Newspaper	Magazine	Other
Albion	4	..	..
Allegheny	4	..	..
Clark	3	3	..
Coe	1	..	..
Colgate	4	..	..
Colorado College	..	2	..
Dickinson	1	..	..
Drury	4	..	..
Hamline	2	2	..
Kenyon	3	..	..
Leland Stanford Junior	..	..	*
Macalester	4	..	..
Ohio	3	..	..
State University of Iowa	*	*	..
Tufts	3	..	..
University of Denver	2	..	..
University of North Dakota	2	..	..
University of Southern California	2	..	..
University of South Dakota	3	..	..
Washburn	*	..	..
Western Reserve	*	..	..
West Virginia	3	..	..

University of Cincinnati reports 'some question of granting two credits this year.'

Only four colleges give credit, and that a small one, for the editor-in-chief of the college magazine.

The Division of Journalism at Leland Stanford Junior publishes a weekly newspaper—not a college paper—as part of the regular work, certainly an interesting experiment.

General Summary

All of our colleges, with the exception of Holy Cross, Union and the University of Virginia, grant more or less credit in the so-called extracuricular pursuits listed. 85% of the colleges offer courses in the gymnasium—required work in nearly every case. Three-fourths of our colleges grant credit in either music or art, usually both. One-fourth of our colleges grant credit for glee clubs, bands or other musical organizations. Likewise, one-fourth of our colleges grant some form of credit for football or other athletics. One-third give credit for public speaking outside the classroom, and one-fifth for journalism outside the classroom.

On the basis of custom, then, students should be required to take at least a year of gymnasium work, and they should be

permitted to elect a variety of theoretical and historical courses in music and art, but their laboratory work in these subjects should not exceed twelve semester hours. So far the majority agree.

Certainly every college student should be required to have physical training, preceded by a physical examination and supplemented by lectures in hygiene. Not 86% but 100% should be the rule. Why colleges of the standing of Wiliams, Yale and Harvard have neglected this requirement it is difficult to understand, except on the basis of tradition. I daresay it is tradition that has caused the old universities of England to be equally negligent. A friend of mine, a Rhodes scholar, rowed on a college crew at Oxford, without receiving any physical examination. Since then he has been rejected by enlistment board and draft board because of an "athletic heart." No American college would permit a man to row on its crew without first giving him a physical examination. Doubtless few of our colleges will go so far as the University of California in giving elementary and advanced courses in boxing and the like, with academic credit. On the other hand, no one has a right today to question the necessity of physical training for every student—if not as an art or a science, at least as a bodily need. The movement toward intramural sports fostered by Reed and other colleges and the setting-up exercises of military drill are steps toward the goal of universal physical training. Secretary Baker observes wisely, "The gospel of college athletics should be athletics for all."

As a rule, it would seem that football, baseball, basketball, track and other athletics should receive no college credit unless under the careful direction of a member of the faculty of the department of physical education. Under these circumstances, there would seem no objection to substituting that training, in season, for the class work in the gymnasium. It goes without saying that the director should be a college bred man and a gentleman. Obviously credit should never be given because a man wins a letter or a contest, but only for work of educational value, satisfactorily performed under faculty supervision.

Are music and art recreational pursuits? To some minds calculus is recreational. The modern pedagog is not adverse to having the student enjoy his subject. Music and art are incorporated in the curriculums of the majority of our best colleges. The problem here is of a peculiar nature: to find those exceptional instructors who have artistic or musical temperament of a high order and at the same time a pedagogical sense of system. There are courses in the history and

theory of art and music which fit readily into the college schedule, but it is more difficult, though by no means impossible, to assign academic values to work in the studio or at the piano. Every college of liberal arts should have some instruction in the history and theory of music and art. This is a response to the increasing esthetic need of our people. On the other hand, courses in practical music or art, when offered, are rightly under a rigorous supervision.

If one permits practical music in the college curriculum—and many of our most conservative colleges do—why not give credit to students in glee club, band or other musical organizations? To say that these students are picked because of their especial fitness is to beg the question, because many classes are so selected. To say that such activities are fun and not work is at best a half-truth, for rehearsals mean work. That it is pleasant work is not to the discredit of the subject. Moreover, a good musical organization promotes college spirit, and wherever it appears it advertises the college. For these reasons college authorities usually exercise some control over the director and the conduct of the organization. Nevertheless, the performances of the average college band, glee club or other organization, although diverting, do not merit academic grades. Under strict faculty supervision, however, the nature of their productions might be improved. As student organizations, selecting their own repertory and director, they deserve no college credit; but as a class under the control of a member of the faculty—which most of them are, in fact, today—they may some time merit full credit for a course in practical music. At the present stage of student activities, however, it is well that such credits are more honored in the breach than the observance.

The same observation seems applicable to college theatricals. Good plays, well presented under faculty supervision, have a distinctly educational value, in *savoir vivre* and *savoir faire*—traits which Americans need—as well as in esthetics, dramatic literature and public speaking. One is surprised that seventeen colleges give credit for band and only ten for dramatic performances, especially when one remembers the recent renaissance of good plays and good acting in colleges throughout the country. The artistic productions of the Cornell University Players, the Yale Players, the Delta Upsilon Society of Harvard, and the Bankside Players of the University of North Dakota have gained a national reputation. More and more the educational value of acting is being recognized, as evidenced by the recent erection of little theaters—the new experimental theater at Oberlin, for example, and the open air

theaters at Berkeley and the University of North Dakota. None of these colleges grant credits for plays outside of the classroom. The campus theater might well be considered a classroom. A large number of colleges give credit for plays rehearsed by students as a part of the classwork in public speaking. If these plays were afterwards to be presented before an audience, assuredly students would not be deprived of their grades for that reason.

Likewise, practically all colleges have courses in debate, for which credit is given. If it chances that the final debate, under the guidance of the best college instruction, is an intercollegiate contest instead of a classroom exercise, it seems quite reasonable that the student should receive just credit therefor, not as a prize, but as an academic recognition of work thoroughly prepared under careful tutoring. One is surprised that so few of the larger institutions grant this credit. Certainly it has the sanction of good usage, if one happens to know the quality of the argumentation produced by Northwestern or Oberlin.

Oratory, we grant, was well nigh a lost art up to the time of the war, but certainly the reasoning in regard to other forms of public speaking is pertinent here. If a college grants credit for oratory in the classroom—practically all do—why should no credit be given for a better grade of oratory under the same faculty guidance, simply because that oratory is to be given the test which all oratory must have, an audience?

Again, journalism is now generally recognized as a legitimate and important academic subject. Classes, departments, even schools of journalism have been recently established. Practice should supplement theory, and unquestionably editing a college newspaper affords valuable experience. If this is conducted wholly as a student enterprise, with little or no faculty supervision, then no grade should be given for work performed; but if, on the other hand, it is made a practical supplement to the theoretical work of the classroom, it assuredly can be made a vital part of the curriculum. As Ohio State reports, "Our newspaper is the labratory of the journalism department."

There are several advantages to be gained by a judicious granting of credit for editing a college newspaper. There are also some difficulties. Faculty supervision must not amount to a rigid censorship. The student editor must take the initiative, but the result, willy nilly, represents the institution. Therefore cooperation between student and instructor is mutally beneficial: the student is guided in a general way by putting academic theories into practice and the college is given

a better standing in the eyes of alumni and friends who read the student publication.

Because of the stress on the practical in modern education, the college magazine is apt to be inferior to the college newspaper. Perhaps the magazines would reach a higher standard both in literary style and in human interest, if they were made to supplement courses in composition or journalism. If that were done, it would be consistent for the college which grants credit to the editor of its newspaper to do the same for the editor of its magazine.

Should credit be granted, then, for journalism, public speaking, music, art, and gymnasium work? Few twentieth century educators would deny the worth of these as a part of the curriculum. But how is the line to be drawn between curricular and extracurricular—between physical training in the gymnasium and physical training under the same supervision on the athletic field; between the practice of music in the classroom and the practice of music under the same supervision in a glee club or a band; between debate, oratory and theatricals in the classroom and the same debate, oratory and theatricals before an audience; between journalism unprinted and journalism which is printed and read? Does anyone doubt that both the instructor and the student will do their best work under the stimulus of publicity? If an oration is to be given, a play acted, a song sung, should they not have an audience? If a newspaper article is to be written, should it not be read? By the very nature of these subjects, publicity is the final test.

Publicity is the key to the paradox. Because of the public honor acorded participants in these activties, college authorities have thought it unnecessary to give any other recognition. Hence, the anomolous position assumed by 65% of our colleges which give no credit for the strenuous preparation under faculty supervision for intercollegiate debates, whereas they grant full credit for an inferior grade of the same kind of debating in the classroom. True, grades are not prizes, to be awarded for winning a debate or a football match, nor, indeed, for winning a place on either team; but grades should be granted as the recognition of work of an educational value, satisfactorily performed under faculty supervision. Thorough faculty supervision is the final word. Debating, acting, writing, drawing, singing, exercising—these so called recreational pursuits which occupy a leading place in students' lives and which in many cases are now directed by faculty members, should be made of a distinctly education nature and given credit. The survey shows that music and art and physical

training are already so recognized and that all of the other activities are on the road to recognition.

This does not mean a lowering of the standards of scholarship, as some of our conservative institutions believe, but rather it reveals a broadening and strengthening of our conceptions of higher education. An analogy is found in the literary societies which flourished as the leading student organizations a generation ago. Gradually their functions have been absorbed by the present day curriculum, which includes literature, oratory and debate. As we have suggested, the preparation for the intercollegiate debate, oration, magazine essay or newspaper editorial is quite as important as the work done for the audience of the classroom.

Moreover, rightly or wrongly, the college is judged by these public activities. The college now lends its name to all of them, and, if it continues to countenance them, it must make them really worth while. Today the intercollegiate debater and orator are invariably coached by the Department of Public Speaking. It is only fair to the department as well as to the student to give credit for the work done. A college newspaper emanating from a Department of Journalism, while losing none of its spontaniety, might well gain in accuracy and scope of speech and idea. A play representing the Department of Public Speaking should be better selected and produced than one that is left to the caprice of a student committee. So with the selections and the performances of the glee club, band and other organizations which might well represent the Department of Music.

Should students receive credit for recreational pursuits? Not unless these pursuits are a part of the course of study, but the so-called extracurricular activities of today will be an integral part of the curriculum of tomorrow.

REDIRECTING EDUCATION AND TEACHING IN A DEMOCRACY

By Linus W. Kline

New conditions growing out of the issues of the Great War have necessitated changes in the vast majority of human enterprises. The problems of education are no exception in the readjustment program. I submit here the results of a discussion in a committee meeting called to consider the changes and modifications that should be made in both the courses of study and in the internal activities of state normal schools. The presentation is made in somewhat categorical form for the sake of brevity.

1. In a democracy life finds its best expression in intelligent and willing service and in the enjoyment of impersonal pleasures. Education is essential to incline man to choose such a life freely. It is thought that literature, art, music, sociology as well as the social and administrative policies of schools may be made to contribute in a large way to such ends.

2. Free and hearty participation in the life of a democracy requires faith in the efficacy of personal effort.

The training of students should promote a practical faith, born of personal achievements, in the value of personal initiative and effort. Their work should be so planned and administered that they may see desires and purposes realized through painstaking, conscientious work rather than by the doubtful art of soliciting favors.

It is thought that liberal provisions for teaching the vocational subjects common to the communities in which the students live would tend to foster right attitudes toward personal achievement and good work. For example: X—— and neighboring towns are largely commercial and her public schools are making larger provisions to prepare students to enter commercial occupations; this preparation begins in the Junior High Schools which will depend more and more upon normal schools for teachers. It follows that the local normal school should take practical cognizance of this need.

3. The ability to appreciate the merits of human endeavor and the genius to prefer human rather than material values promote an easier and more helpful participation in democratic life.

It is claimed that literature, the fine arts and the history of industrial, social and political struggles, when adequately taught, will stimulate and train the humane sympathies.

4. Those who would live whole heartedly in a democracy should be able to detect error and falsehood and to replace them with the truth.

Inhibited action arises from ignorance. Freedom of action is conditioned upon knowing the truth. To cultivate a love for truth and to enkindle a passion in young manhood to be right depend more upon the spirit and the manner of teaching and upon who teaches than upon that which is taught.

5. To take an acceptable part in our democratic life, however humble, resuires a working knowledge of the inherent balances and connections between duties and obligations on the one hand and rights and privileges on the other.

A course in "Home and Neighborhood Morals and Manners" planned and taught by an able teacher of large faith and working ideals ought to be immensely valuable for pupils in Junior High Schools.

6. Loyalty and patriotism for our national institutions and ideals are not formed by fortuitous agencies. They are sentiments and not school subjects, and as such develop slowly by educational processes.

It is often urged that certain subjects are specially fitted to develop these sentiments and there is doubtless some truth in this view. But it is contended that these sentiments rest upon broader foundations than those afforded by the school subjects. And among these "other foundations" none are of more vital importance than the strength and quality of these sentiments as possessed by the teacher, the teacher of the school child.

The church does not tolerate a compromising, indifferent, negative or cynical attitude among her teachers. A democracy can less afford to suffer the teachers of her children to be lacking in these sentimnets or to be negative toward them.

The reconstruction of normal school work should be so planned and administered as to insure positive sentiments of loyalty and patriotism in its graduates who will in turn cultivate them in their pupils through the influence of character and by an appropriate use of song, poetry, literature, history, and of biography.

7. Democracy requires that teachers and school officers shall inspire, aid and guide young life to a self revelation of its powers and aptitudes.

The historical pedagogue and the democratic spirit have not gibed well. The term 'school master' in education like

that of 'His Majesty' in government is not merely awkward but a bit embarrassing and although neither are any longer used literaly the new age prefers less autocratic terms.

Some of the spirit of the autocratic school master has descended to the administrative machinery of education. Administrative technique is too much with us; it more often *bulls* than serves the school room. Like the former school master it conceives its function to consist of setting up controls, checks, limitation and inhibitions as if pupil and teacher were a federal post office or a department store. If the administrative functions *must* be "businesslike," its activities should be limited to dealing with things, with inorganic matter as fuel, supplies, etc. But if it *must* exert an influence, be a power in school affairs, let it attempt the more difficult and delicate, yet far better, role of duly encouraging and inspiring teacher and student.

The teacher who would inspire, guide and aid students in self revelation has an inexhaustible field of means in both the expressive and cooperative forms of school work.

8. The fear is expressed that educational reconstruction, socalled, will extend too far. This is a misplaced fear and on the contrary we should fear that too little will be done. This julgment is based upon the fact that the policies of state and public schools are conservative, that the work of secondary schools as a rule falls short of the public needs. Besides, faculties and boards of education are prone to balance the pros and cons in discussing school problems to such a fine equilibrium that action appears unnecessary.

PRACTICAL APPLICATIONS OF PSYCHOLOGY AS DEVELOPED BY THE WAR [1]

By G. Stanley Hall

It looks today as if the Peace Conference in Paris was to be only an interlude between two great wars; the second war, which we hope will not be with material weapons, being that between Capital and Labor, the Classes and the Masses, Culture and Bolshevism. Soldiers leaving the army make common cause with the workmen, and a propaganda of bolshevism is fast becoming more insidious and effective than that of the German cause ever was. Strikes and even crimes against property and person show a new kurophobia or horror of the authority and control so essential for ordered industrial and social life, and behind the political peace striven for by the delegates of the great powers loom the far vaster problems of industrial peace, without which all treaties will be temporary and ineffective. Agriculture, manufacture, trade, and commerce absorb today nine-tenths of all the energy of the world. They control most of the talent, muscle, interest, and human energy. Their interests dominate politics and statecraft, which are now little more than business agencies; while economic efficiency tends to impose its ideals, standards, and its fashions and spirits upon even all the culture institutions of society. The extreme proletariat the world over now tends to see red, and we mark on all hands elements that, if they had power, would repeat over all the western world a reign of terror like that of the French Revolution. There is a growing number who feel even toward the middle class bourgeoisie much of the same rancor that the bomb-throwing anarchist feels toward the millionaire. So prominent are these tendencies becoming today that it already looks as if the nations that would succeed in the impending competitive struggle for industrial leadership would be not those that have most capital or most raw material, or the largest number of workmen, the most trade or the most transportation facilities, but the nations that could most successfully cope with the growing industrial unrest and find the best antidote for the subtle and infectious bacillus of bol-

[1] An address given at the Fifth Annual Convention of the Vocational Education Association of the Middle West, Chicago, January 17, 1919.

shevism, for until its spirit is quelled or else enlightened or converted to better ways the world will never see true peace again. For real ultimate peace the new "red peril" is a greater and more formidable danger than German militarism, of which this is the Nemesis, ever was.

In this impending crisis where shall we look for guidance? I fear not to politicians or lawmakers, for they have in the past accomplished but little and have shown little true initiative. Capitalists, too, as a class have done little to placate labor, save under duress. Economists and sociologists have dreamed many dreams and woven alluring theories, but some of them have capitulated to labor and few have won even a respectful hearing from the great captains of industry. So they are hardly in a position to be peacemakers. Industrial educators have nibbled at the fringes of the problem and accomplished here and there results of local and temporary importance, but both their visions and their sympathies are too restricted. Religious leaders often warm our hearts by their good intentions, but the heat they engender is not enough to melt and recast the old prejudices, customs, and interests that constitute what is too often the devil of things as they are.

In view of all these facts of the present situation my conclusion is that the first step for those who wish to volunteer as soldiers in this stupendous war that impends for true peace is to look over the past and present and make an inventory of all the successful partial solutions that can be found, and thus not only to hearten ourselves and draw inferences from each but try to synthetize and apply these lessons to the larger tasks of the future. Out of these cases, if we can do so at all, we can construct a program that will inspire confidence enough to make us work for it.

If this view be sound, the chief burden of responsibility just at this juncture rests with the philosophical observer, who is not too near to details to lose perspective and not too far from them so that the essentials of any will be lost, and who is not predominantly interested in any one or more partial solutions.

Our task, thus, is nothing less than to rehumanize industry, to break down the disastrous partition that has grown up between brain-work and hand-work, to appeal at every step to mind lest we add to the degradation of labor, remembering that the brain in its evolution was hand-made and that in all progressive periods of the past the two have always gone and grown together. We must find a way of putting not merely head and intelligence but heart into work, as also was the case of yore. We must search everywhere for the

culture elements, which are inherent in every industry and even in every process, and which it is the tragedy of modern industrialism to have lost. Work has made and it alone can perfect man; hence we must attempt to restore or else create a morale in every great branch of industry. All this stupendous task I believe can be wrought out, because nearly every item of it has been accomplished somewhere and at some time.

There is a very pregnant sense in which the war is not ended but only transferred to other fields to be carried on by other agents. Those of us who have not smelled powder must now come forward and take up the battle which is waged against conservatism and inertia, by which things tend to slip back into the same old ruts as before if we do not mobilize and use all the unprecedented opportunities and incentives to reform to make the educational, industrial, social, political and religious world fitter to live in; for otherwise we break faith with the millions who have died. Our foes are timidity and laziness in this new spiritual conflict to which the battle of arms has bequeathed its precious legacy. To say that reforms are now needed, though hard and dangerous, is true, but to leave them unattacked is a slackerdom unworthy of the spirit of our armies in France. The new struggles we ought to enter upon are the harvest of victory, and are harder and will take far longer than war itself. Let us, then, glance at a few things that have been done.

(1) Some years after our Civil War closed, when carpet-baggers from the North had overrun the South and the Negroes had learned to abominate work as suggestive of their former condition of slavery, when the antagonism between the whites and blacks was represented by the klu-klux and other clans, when class and race animosities were at their very height and harmony between them seemed impossible, Booker Washington conceived and found a way out. He taught his race to waive in many cases the political privileges they so prized of suffrage and inspired them with the idea of working now not for their master's advantage but for themselves. It was a slow, hard task that for a long time seemed impossible of accomplishment. The Negro had forgotten many of the crafts that he knew in the old days, and these had to be relearned and many others added thereto. Much of the most bitter opposition to his work came from his own race, but those who were really reached by his influence were transformed, the white sympathy and support were enlisted and a great peace supervened, and in the very district where the rancor was most bitter the harmony is now most

complete. The antagonism today between Capital and Labor can be nowhere greater or more widely spread than was this antagonism, so that here we may draw an inspiring lesson of hope, and we may also find not a few methods that will be of service in the great new harmony that we must now strive for between the newly enfranchised and emancipated forces of labor throughout the world and its leaders and employers.

(2) Another inspiring instance is found in the work of rehabilitation that has been done with the maimed and wounded soldiers. Many of them felt that they had done their "bit" toward saving the world from autocracy, for they had been praised by men and admired by women as heroes, and that this, especially in connection with their infirmities, exempted them more or less from the necessity of earning for themselves or their families; and some of them felt that they must be pensioned, supported, and served for the rest of their life. The task of the social worker and persuader was here as tedious as that of the psychoanalytic doctor. They had to be converted to a new view of life and of their own functions in the world. Hence inspirers were brought, men who had themselves suffered severe bodily injuries but had overcome them. Handless, footless, legless men were inspired to see that they could again find place in the industrial system and were given new heart and courage to accept the situation, and in the most successful of these institutions they have competed with each other and achieved marvels of efficiency despite all their handicaps. Just as Booker Washington accomplished with the white or ruling class almost as great a work as he did with his own people, so for the disabled soldier a great many employers have been induced to make concessions, some of which will doubtless be permanent, in favor of these cripples. Thus again we have a radical change of attitude toward labor that in the last cases has almost amounted to a conversion.

(3) Miscellaneous Reforms. Who would have thought before the war that the great prohibition wave could have swept the country and become national. The liquor interests were rich, powerful, strongly entrenched, and moreover there has been a deep feeling even among the temperance men that sumptuary laws constituted an infringement of personal liberty. And yet, in spite of all this, the country is going dry, and enthusiastic advocates of the cause are beginning to dream of extending the movement throughout the civilized world.

The same is true of woman's suffrage. In this country

and throughout Europe women have come to the fore in industrial, social, and even political ways to a degree that the most ardent feminists hardly dared to hope at the outbreak of the war. We need the woman's view, perhaps not so much in politics as in social and industrial life, and woman's more humane and personal attitude toward problems of reform will make many things possible that were not so before.

Perhaps we might place in the same category the striking reforms that were effected in the matter of the social evil in some if not most of our training camps.

So, too, the control of railroads and other great public corporations by the government, whether it is permanent or transient, has opened a way before an equilibrium is restored for many reforms, and everywhere the war and its exigencies have made for plasticity and open-mindedness.

Even in the matter of religion we are coming to realize the need of reconstruction and especially of going back to the first principles of loyalty, self-subordination, obedience, sacrifice and other virtues of the trenches, which are psychologically the basis of the religious life.

(4) This brings me to the purpose in which this association is now especially concerned. The efficiency of war in this country has been incalculably increased by what might be called the vocational guidance work that has been done by scores of expert psychologists. No great enterprise has ever profited so much by placing the right man in the right place, and America's war work here will long be not only an object lesson but an inspiration for the application of the same principles of fitting every man to his job in all the great lines of business. To understand this, which is my chief theme, we must pause and take a wider view.

Individual psychology has had a long and hard travail. Christianity stressed the infinite worth of individuality but it was for the next world, and it did little to ameliorate conditions in this save only to cultivate the virtue of charity. The school, industry, army management and politics were based on averages that eliminate individual differences. But now medicine is beginning to recognize the fact that every case presents new problems that transcend textbooks in pathology, while psychoanalysis spends weeks and months upon a single case. Thanks to Binet, Simon, and Lombroso we grade feeble-mindedness and differentiate criminals, and in the study of normals differential psychology is everywhere in order.

I. Of all the people on earth, past and present, no two are

alike even in their finger-prints, of which there are forty types, while psychic are far greater than somatic differences. There is no trait in which men do not differ, even at birth, and these differences increase with every year of development. In any large group, according to Thorndike's estimate, some children are four to six times as capable as others, even those with similar opportunity and social environment. Especially when we correlate traits we find as many types as there are individuals. The psychology of qualities common to all, which we have chiefly taught hitherto, though very fundamental is very limited when compared with the new differential domain now opening before us. These differences are both inherited and acquired, although these are often hard to distinguish and it is still harder to tell which predominate.

II. In evaluating and utilizing skills acquired in peace for war activities the army psychologists, Scott, Bingham[2] and others, have given us a valuable and most inspiring example: "Under the urgent necessity of creating and organizing an army in the shortest possible time every scrap of training and experience that was needed by the army was a national asset." Thus for each a qualification card or index of fitness was made out by the personnel officers that showed "just what kind of men in terms of civilian experience will learn the special duties" of the army in the shortest time. Oral, picture, and performance tests were carefully worked out that graded each kind of skill. For those only partially fit physically four classes of limited service have been established, which were more and more drawn on, and development battalions have been created. On such data men are selected not only for special tasks but for promotion, while the final rating scale takes account not only of physical and intellectual abilities but also of leadership, many personal qualities, and finally of general fitness for the service.

III. Of all psychic qualities we have the best tests for intelligence. In addition to the ninety which have grown from the original fifty-four French tests for psychological age we now have many series, besides three specially devised for the army, on the basis of which intelligence scales can be built. Here standardization is a prime requisite for without it there can be no comparisons, and these are essential for any science. A real standard is of universal application for it is objective and unaffected by opinion, likes, dislikes, or even race. It is more or less outside and independent of school work. Terman well compares these findings with ores or soils dug up at different but carefully selected points and sent to an assayer

[2] Personnelle: Vol. I, No. 1, August 21, 1918.

or soil analyzer that he may evaluate them for the miner or the farmer. It is not easy to set up really typical tests, and the results of each must have a high significance in itself, well understood beforehand by the expert, and it must also have if possible a high correlation value suggesting the presence or absence of other powers or deficiencies.

Rightly used this method takes us not only far beyond all pseudo-methods, such as palmistry or phrenology, but beyond the off-hand judgments of the best connoisseurs of human nature and beyond the slow method of natural sifting by experience. For higher grades of intelligence we have also the method of average estimates of those who know the individual best.

Now the real value of even the best tests will not be finally determined until we have an authentic exposition of just what each tests and what its findings mean and imply. It is not easy to select true samples of every kind of intelligence. Not only perception and observation, but memory, association, imagination, reason, information, experience, judgments, originality, and even vocabularies,—each represent vast and complicated functions and are indefinitely varied among individuals. Nevertheless we have made a splendid beginning, at least, toward calibrating the ranges of intelligence for the army, and a great future opens here if we can avoid the danger, just now I think a little ominous, of a sense of finality and overestimation of the value of methods thus far developed.

IV. But intelligence, however broadly defined, is only a part, and we have but just begun to differentiate for practical uses what is comprised in the more basal domains of character diathesis and morale. We know less of the will than of the intellect, and far less yet about the vast domain of feeling or affectivity.

From the old doctrine of temperaments now significantly revived to the present we have a vast diversity of conclusions among experts save only a very general consensus that there is a fundamental difference between centripetal and centrifugal characters (Jung's intro verus extroversive; James' tough versus tender; Ostwald's classic versus romantic; Nietzsche's Apollonian and Dionysian; Frink's passive and active, knowers and doers; perhaps Geddes' shepherd and hunter type; Goldthwait and Bryant's herbivorous and carnivorous; while Davenport in his quest for unit characters suggests hundreds of possible traits that may be independently variable and also hereditable). Far more practical, though not often occurring in pure form and therefore not always easy to distinguish, are

the four somatic types of MacAuliffe and other French anthropologists. According to this group of investigators there are four chief types of man, as follows:

(1) The first is the abdominal. The head suggests a truncated pyramid, smallest at the top and broadest in the level of the jaw. The neck is large and short, the stomach is large in circumference and also tends to encroach upon the thorax, and the umbilicus is high. Men of this class have peculiar liabilities to certain diseases and peculiar power to resist others. In some respects they resemble the ancient phlegmatics. They are very dependent upon food and drink for their efficiency; the meals must be regular and abundant for their digestive powers seem to condition all other functions. In war they are best for defence, not only because their inertia makes retreat physically and temperamentally hard but because they fight best for stores. They can endure great hardship and fatigue, provided only their rations are not scanty or defective.

(2) The second is the respiratory type. Here the head is broadest in the middle regions, at the level of the ear and the nose, and tends usually to taper both upward and downward from this plane. The lung capacity and chest expansions are highly developed. The body is usually long in comparison with the limbs, like the preceding type, but the umbilicus is low for the thorax encroaches upon the abdomen. Men of this type are active, venturesome, bold. As the adbominals do best in the trenches, these men are often best in skirmish fighting, and outpost work above ground and especially in the mountains, and they make the best aviators. They are exquisitely dependent upon aerial conditions; they need an abundance of pure air, suffer where it is foul as in the trenches, can go without food, and have great power generally. They are in the closest kind of *rapport* with atmospheric conditions.

(3) The third is the muscular type. Here the head tends to be cubical. The neck and limbs are long and powerful, and the trunk makes up a less proportion of the body length than in the preceding types. Neither the thorax nor the abdomen predominates, but this is a muscular type which has to have a great deal of exercise and thrives under hard physical work. In the army these men are best in heavy labor, such as trench-digging. They are quite versatile but cannot stand inaction. It is hardest for them to remain days immobile in the trenches, for their morale depends upon abundant activity of the muscles.

(4) The fourth or cerebral type has a head largest at the top and smallest at the jaw, the inverse of the abdominal. The

build is rather slight, with no special predominance of any other portion of the body, as in the preceding type. But this type, sometimes called the "adrenalin type," has extraordinary power to draw upon its reserves. It can stand long, extra stresses, and very often when the other types are exhausted, as in very arduous campaigns, these men go on. They respond to the call to go "over the top" when a regiment is "all in"; but when they are at the end of their large store of energy they are prone to collapse. This erethic, inflammable type is thus best in emergencies, in aggression, and where staying power is called upon.

Of course very few individuals are pure types, but medicine, as well as industry and war, becomes far more efficient if regimen or work is prescribed according to the predominance of one or the other of these types, which of course slightly suggest the old four in the above order, phlegmatic, sanguine, bilious, and nervous.

The distinctions which it is claimed are of great service not only in medicine but in the army are of types that their advocates hold to be even more significant than race itself. In this field we have two noteworthy beginnings which might have been developed to be of great service in the army had the war continued. The first is that perhaps best represented by MacCurdy's study of shell shock cases, which seems to show a positive correlation between night terrors and fears in the dark in children and general panic-starters in war; between abnormal dread of thunder storms and of shell fire; between dread of tunnels and bad air or premature burial and horror in the trenches; between abnormal fear of blood on the one hand, and of disposition toward cruelty to animals on the other, to military functioning; between sensitiveness and lack of adaptability in changing from vocations of peace to those of war.

(b) Woodworth has undertaken to collect and interpret personal data, with a view to determining serviceability in war, concerning previous experiences with dreams, nightmare, falling, blushing, disposition to fatigue, dizziness, headache, fainting, loss of memory, solitude or shyness, quarrelsomeness, attitude toward crowds, responsibility, dread of high places and fire, biting finger nails, bed-wetting (see Adler's enuresis), suicide, drink, and many other traits.

(c) The hardest and highest problem of war psychology attacked is army morale for this is the soul of an army,—without which it would be a mob—, which some military writers rate of even more importance than equipment, ammunition, etc., and which nearly all rate second only to these.

Nearly two years ago the soldier-psychologist, Brigadier-General Munson, drew up a plan which he was able to put in practice at Camp Greenleaf, according to which each recruit was given much personal care, his home relations were kept tonic, he was given better food and more diversified entertainment, etc., for the first fortnight, while Lord and Hocking and Eltinge have given us valuable books about it. This rough outline does but scant justice to what these scores of psychologists, who left their academic work, have been able to do for the vocation of war. It is a supreme and inspiring achievement to vocationalists as we revert to the already well-advanced work of vocationalizing business. Even the Corporation School movement has now fully realized that the prime factor in efficiency in industry is not capital or stock but labor, that the most economic of all changes now confronting the ever more differentiated lines of business is to get the right man in the right place, that even improvements in machinery are not so much needed today as are improvements in labor and its conditions, so that the aptitudes and skills of each worker are utilized, and the morale not only of each great line of industry but of every great firm should be developed and kept at its highest point. This is the lesson, too, of the Arts and Crafts movement, as well as of the great Guilds of the Middle Ages that inspired it, and is already well illustrated in a few great American plants.

In this moment of transition between the unprecedented achievements of creating in two years and equipping an army of four million men, training and transporting one-half of them three thousand miles and conquering the greatest military power on earth, a thing that makes even our own great industrial achievements before seem a little pale and ineffective, and the great business revival that seems to be just at hand, what are our prime duties? I answer:

(1) To take a broader view of our problems in general, to realize the unique opportunities of the hour, and to feel our very grave responsibility. Our training for vocationalists is not yet broad or long enough. However scientific industry may become it must not tend to *kultur* to the neglect of *culture*. It was a joy to learn of one thousand members of our American Society of Engineers applauding to the echo the address of their President Hollis, urging them not to forget that spiritual must dominate material agencies in their work lest the latter become a Frankenstein. Humanism in our material day and land is not assured or even helped by a little Latin, nor even art or literature, but we must chiefly *develop it right out of the heart of each of the chief occupations themselves*. The

stories of its processes and inventions, the sources of its material, the destiny of its products, its role in modern civilization for the individual and the country,— this is a new old culture element which can give each intelligent workman in the world today a new sense of wide relations and of essential service to mankind. As an aid for teaching this we already have a choice little but as yet almost unknown literature which could and should be gathered and increased, for a little training here goes far toward the correcting of the growing discontent which goes with specialization of labor. A few leaders are already beginning to awake to the possibilities in this direction.

(2) And more specifically. The schools lavish time and labor in keeping up their system of marks, teachers sometimes grading every pupil every day in every subject. This work should be cut down and in its place there should be slowly developed a system of general rating of each pupil, with reference not only to success in studies but to health, with a few physical data; mental aptitudes, tastes, and abilities; skills; achievements outside of school and salient traits generally. In Aix-la-Chapelle many years ago a scheme was developed by which every child came to school in its best clothes two or three times a year and wrote out all its lessons for permanent preservation, so that a glance through the book was a truer index of the progress the child had made than any examination could possibly be. In this same "Life and Health Book" the parents, if intelligent, recorded frankly and confidentially their impressions and important facts of the child's life, as suggested by a brief questionnaire. The family and the school doctor both made their own entries, and the teacher and sometimes the pastor added their comments. These books were preserved in the City Hall unless the subject fulfilled certain conditions, while under others intending employers could look them over.

Thus such a scheme would at least give the child on leaving school and seeking employment some of the self-knowledge and self-rating which all so intensely and half-consciously seek, and would at any rate give first-aid to each in becoming his own vocational guide, for much as we may help the very best we can do is to enable each to know and to guide himself. Right self-evaluation and self-direction are the consummate flower of the democracy which we are now triumphantly leading the world into.

In the mass, lockstep methods of the school nearly everything is necessarily addressed to the average child. We have studied and differentiated and are segregating morons in

classes apart, but the superior child is still generally undetected and almost never given the special help he needs to prevent striking a slow pace for life. Vocationalists, then, have a boundless task before the problems of developing and bringing out the individuality on which success in life depends, for differentiation of schools and even courses is not enough but is only the beginning. The inertia of leaders of industry in this country today is not nearly so great as was that of the army at first to any kind of personnel work and especially to tests. Thus we have every reason for courage, even though we cannot forget that our task is no less than that of fitting each to fill the place best suited to him in the industrial system.

(3) The call of industry to the psychological vocationalist was never so loud and clear as it is today, and it is sure to increase. The war testers are most wanted, even at alluring salaries, by great concerns, where their aid is sought in calibrating workmen and assigning them to the different departments, in advertising, in shortening and economically reconstructing traditionary processes, à la Taylor, Galbraith, etc., and even the social worker and recreationist is wanted, for employers are realizing the great and growing menace of I. W. W. and bolshevism. Schools within corporations themselves are one of the most genial and original creations of education in this country, while the influences of the Gary system are perhaps even more effective just now in opening men's eyes to great possibilities in this direction than in the good things they have actually accomplished.

Despite all that has been done of late our educational institutions are not only still far from being able to supply the experts wanted to guide youth in making each type of industrial decision he must make before he settles but in helping industries themselves. Economics, sociology, psychology, pedagogy are not yet able to do all that is required in this great epoch of recognition of the supreme value of the human element. What we have to do sooner or later is to go into the shops, factories, stores, offices of big business, of transportation, banks, accounting, and all the rest and, if we are really to undertake the great work of humanizing industry and industrializing man, to try to turn the present curse of labor into a blessing and to make it not abhorred but loved as the chief instrument of human development in the modern world, to make men put pride of creating and conscience in place of shame and shirking, and to inspire even the most specialized workman with a larger view of the whole so that each cog begins to feel itself an essential part of the vast machine. Nothing less than this

is the responsibility now laid upon the vocationalist, and this means a long period of high specialization of our own labor, kept liberal by the keenest interest in every item, e. g., of a wide-ranged and well-balanced program like that of this meeting.

(4) Sooner or later vocationalists must inventory all the great lines of business with the utmost care and detail, a work that has already been most hopefully begun, in order to find out not only just what human qualities are needed by employees in various departments but also to find out the culture elements that are possible for each, to make them attractive and develop them. There should be a brief history of the industry and of its great achievements; the geographical distribution of its interests, its magnitude, importance, vicissitudes, and every process from the crudest raw material to the finished product marketed and in use should be set forth. An example of this I myself attempted to suggest many years ago were the desideratum of books on the leading trades, e. g. a *Shoe Book, etc., was described.*[3]

(5) We must also be alert and keep an open mind to rightly evaluate every new project, such as the Bureau of Educational Experiments is founded to consider. The very clever scheme of Caroline Pratt[4] is worthy of attention. Finding the toy industry in America far behind the needs of children or what it is in the leading European countries, she proposes an educational, model industrial school to make carefully chosen toys, and not only that but an agency to market them, such that every child shall in two years pass through the entire course from the place of origin for the material to the market and use of the toy. This might be supplemented, as the business developed, by making simple scientific apparatus which would have a peculiar educational value of its own. It is not at all impossible that the school will have to take this vast material of industrial education out of the hands of capitalists and out of the reach of trades unions, and present the world with finished model institutions which are at the same time cultural and economically self-supporting, as indeed another famous institution that has been in operation for a quarter of a century in France, viz: the *École des Livres,* set out to do.

A German physiologist, Nicolai, who has written what many think the best of all the war books to date, estimates that every individual of the one and one-half billion now on earth commands today on the average, owing to discoveries

[3] See my *Educational Problems,* 1911. Vol. I, p. 624.
[4] Helen Marot: "Creative Impulse in Industry," 1918. p. 116.

and inventions, about eight times the amount of the energy of Nature that was possible one hundred years ago, and concludes that our chief problem is now how to use this prodigious increase in power aright for weal and not woe, for bringing man to an ever more complete maturity and not for his arrest or, still less, his destruction. My answer would be that we are now called on to develop eight-fold the moral energy we had a century ago. Thus alone can the world be trusted with this ever-growing new power at its command. We have not but must now attend to this if scientific advancement is to be made a blessing and insured against being made a curse to man.

What is the true moral equivalent of war? Of the half-dozen suggested I answer, in view of all these facts, that it is to do battle against the unknown; against man's chief enemy, Ignorance; to carry on the warfare of science till it controls the world; to discover, invent, apply; for compared with this age-long struggle of man to master Nature even this colossal warfare is but an alley brawl. Thus as peace supervenes we ought to feel a new call to arms.

THE VIEW-POINT OF THE PSYCHOLOGIST AS TO COURSES OF STUDY WHICH WILL MEET THE FUTURE DEMANDS OF A DEMOCRACY[1]

By G. Stanley Hall

As we turn from the arduous and transforming work of the world war to face the new era of world reconstruction, we must first of all realize that it is our thrice-blessed privilege to live, and also our awful responsibility to act in the greatest crisis of all history. The waters are stirred as by the Holy Spirit; old rigidities are plastic; opportunities for reform of which we have hardly dared to dream are at this moment wide open, and radical transformations have already begun. We educators charged with molding the souls of the rising generation must listen intently and reverently to the clear call of the eight million slain in this war that their supreme sacrifice be not in vain. To let the world slip back into the old ruts as it was before would be treason to them and to all who have borne arms in this struggle in any sense, material or spiritual.

Man has tried to domesticate some six-score species of animals. With some he has succeeded, and they have grown tame, large, and have multiplied. Other species could not adapt themselves to the conditions man imposed and so either died out or relapsed into the wild state, as they were before. What we call civilization is the sum of man's efforts to domesticate himself, and under its influence many tribes have developed into great nations which have perished or else reverted to the old feral state of war; in either case just in proportion as the customs and institutions he imposed upon himself failed to fit his nature and his needs. This shows us not, as pessimists infer, that culture and civilization are themselves a disease but that beyond all peradventure we must now go back to first principles and look again at human nature as it is per se, and readjust the social, political, industrial, and cultural environment to man as he is. So in education we must now see to it that we have gone the limit in fitting the school to the child and made our system paidocentric instead of scholiocentric, that this Co-

[1] Read at the Fifty-fourth Convocation of The University of the State of New York, Albany, December 12, 1918.

pernican revolution is complete, and that evocation and transformation cast out repression.

Again, we have taught the world that the voice of the people is the voice not of autocrats or kaisers but is the only authentic voice of God on earth, so that a true democracy must always tend to be more or less of a theocracy. Hence to make democracy not only safe but triumphant throughout the world it must be extended to children, and the interests and aspirations of Youth must be our Muse. We must reedit our curriculum and refit it; we must discriminate anew between the essential and the unessential pedagogical industries, rehumanize the so-called "humanities," and work out a higher synthesis of the new enthusiasm for humanity, which is stirred anew by the war to its very deepest roots—and the deepest roots of humanism are always psychologically considered religious. We must also incorporate in the school the best of the new spirit of discipline, taught us so effectively during our eighteen months of active warfare.

The speed with which millions of our peace-bred youth were transformed into a victorious army suggests that we educators have not been in earnest in our work, that we have underestimated the capacities of our young people. We see now also that our military achievements have been no whit less in morale and discipline than in material equipment. So in the school we should realize that we have been inefficient and have worked far below our possibilities and those of childhood; that, if really put to it, average American children can without harm or scathe accomplish far more than our present standards require toward attaining the goal of humanistic culture, as symbolized by the classics, and also the goal of vocational and specialized equipment.

Youth is the time above all other periods when we must appeal to the higher powers of man; there must be intensification of interest and effort, an intellectual second breath, afflatus, or erethism, if only as the most effective of all safeguards against the one chief sin to which youth is prone. Their chief need is inspiration. To this end the liberal and the professional goals, while they interpenetrate and should not be kept very distinct in practice, should always be present, and, as Lotze and Bergson tell us of the mechanical and spiritual, neither should be subordinated to the other.

The first premise is that the more democracy advances the more we must appeal to the interests of school children and youth, and the less we can rely upon authority and prescription. Even discipline, some forms and degrees of which are indispensable, must be more or less self-imposed, and there-

fore it will come far easier in vocational than in cultural branches, where interest must still more be our guide. From this it follows that the factitious stimuli of examinations will be less and less effective as the demand increases that every child and youth should be in every subject in that grade of a great system in which he can get most good, rather than in that for which he has served an apprenticeship of a prescribed number of hours or years. The ways of getting into institutions, grades, classes, and subjects should be made easier, and only the exits with honor made hard.

Now to illustrate these principles let me try to roughly tab off for a few sample topics the new or now greatly reenforced changes needed to meet the future demands of democracy.

I. First and foremost, in every school system we must henceforth consider *health,* which means wholeness if not holiness. What shall it profit a child if he gain a whole world of knowledge and lose his own health, or what shall he give in exchange for health? We have made great progress in recent years in school hygiene and in enlisting the work of muscles, which are the organs of the will and nearly half the body weight. But the school must share some of the responsibility for the *circa* forty per cent of drafted youths physically unfit for military service. We should certainly very carefully consider with a view to permanent incorporation of its best features the various experiments of military or premilitary training, led in this country by Wyoming and by the state of New York. If we can only introduce with this a bit of the morale which is the soul of armies, and which Napoleon made even more important than equipment, and develop the spirit of loyalty, mutual help, patriotism and the spirit of companionship in arms, we can take a great step towards the realization of the Greek ideal that the best thing in physical training is the mental and moral discipline it gives. Prosperity in peace, no less than success in war, is impossible to weaklings, and I think we should study the effect of the experiment California is making with a new state director of physical culture and body-keeping.

II. *Physics* a generation ago was selected by the Committee of Ten as the entering wedge of science into our secondary schools. It immediately became the center of great activity by specialists who knew physics but did not know the nature of youth, with the result that physics was dehumanized, with mathematics unduly stressed, and standardized in hours and experiments, so that in less than twenty years a comprehensive census showed that barely 6% of high-school boys were tak-

ing it at all. Of course now, as we all know, the pendulum is swinging the other way, and it has become clear to the competent that we must utilize the cultural elements in the history of the science, with some reference to the lives of its great men, and we must also have frequent glances at the vast field of its modern applications, e. g. to autos, aeroplanes, submarines, ballistics, as well as to kites and tops, and some of the standardized lists of mechanical toys to illustrate its principles.

It is a psychological law that interest, like steam in an engine, has to be developed over a large surface before it can be applied effectively to a small one. Thus we must rescue physics in the high school from the antipedagogic, narrowing, and excluding methods imposed upon it by college texts, and let our youth see that it is the open sesame to many of the greatest achievements of man in his conquests of Nature, and not a set of puzzles. It is true that these guides have taken youth through a very rich country and along well-chosen routes, but it is as if these highways were sunken so that the landscape had been traversed with no conception of its interests but only with aversion. Interest at graduation is more important than knowledge. The new dispensation in the field of physics is typical of the changes needed wherever astronomy and geology are begun, and to some extent also in chemistry.

III. More and more think we made a mistake in not introducing *biology* into the high school as the type science instead of physics, but biology was then handicapped by the suspicion of teaching evolution, it was a far newer science, and its practicalities were less seen. It is per se more humanistic than physics, for it deals with life. It has already a notable list of great men, some of whom have been saints and martyrs to it, it conditions our vast industries of agriculture and forestry, it gives a scientific basis for both personal and social hygiene, and opens up vast vistas in its applications to men by way of eugenics. Indeed, it is *the* natural science that underlies anthropology, not to say sociology and humanity and all its works and ways; therefore if "a proper study of mankind is man", it should now have a unique preeminence.

But here again our current methods and texts, with their affectation of hypersystematization, have wrought their disenchantment by narrowing zoology to perhaps the story of the chick, or perhaps even beginning with things invisible to the naked eye and overstressing microscopic technic, or else have sought to be superficially comprehensive by loading their pages with descriptions and names of sample species

throughout the whole animal kingdom. Botany has suffered still more from this *morbus pedagogicus*. I can think of no greater intellectual need of our schools today than a new syllabus in this domain, which at every step shall select the points of chief *human* interest, to all of which the mind of youth is so keenly attuned.

C. F. Hodge ten years ago marked something of an epoch by bringing in in his "Nature Study and Life" for grammar grades the economic aspects of biology, connecting for the first time the great work of the Washington Bureau and the Agricultural College with the mind of the child, and he has just supplemented this by a high-school text. But now we want something more which shall link all the studies that deal with life in general with the life of man. Years ago Katharine Dopp in this country faintly glimpsed one of these vistas, and Frobenius in his "Aus den Flegeljahren der Menschheit" another. Has not the time now come when the fact that evolution arose in this field should no longer be a bar to the whole domain, as the vestiges of the old *odium theologicum* still make it; and is not the time at hand when the *odium sexicum* should no longer bar a sane and chaste teaching of the practical and certain results of eugenics, in which not only the nation but the race has such a vital concern, especially now when we must replace the losses of the war? The very controversies about many of the questions in this field have generated a vast body of interest which, now that the battle of controversy is won and the air is clear again, ought to be utilized for pedagogic ends, for which they are such a rich and precious asset.

Once more, children's interest in animals is almost as deep as their interest in man and children, but all these zests are relatively unutilized by the school. If there is any field where we need to go back to first principles and study human nature and human needs, and reorient and reconstruct our own selves, and also if there is any field where the true insightful pedagogue should be supreme and lay down the law to the biologist as to what ground he should cover and what subjects he should introduce in his course, it is here.

IV. The goal, proximate if not ultimate, of *history* teaching should be patriotism, and in this department the center of gravity of interest has certainly moved forward in time. Not that ancient history is less important, but at this epoch, when history is being made at a far faster rate than ever before and when we hope the world is swinging into a new course, the goal of all historical teaching should be the living present, and all courses that leave a gap of years between

their conclusion and today are hopelessly inadequate. It is the here and now that claim attention as never before, and the responsibilities of the citizen voter in the midst of the world-wide problems now open is incalculably greater than ever. In a day when old party cries are less potent and when our interests have been so suddenly given nation and even world-wide scope, education must realize the new responsibilities of making members of society on a larger pattern than ever before. There are new motives for teaching even European history as well as geography, and the emergence of this country from its isolation and the vital incorporation of its interests with those of the great nations of Europe bring problems that may well cause us to pause. The value of history today, as never before, is the light it sheds on the immediate future. We feel that the best history is just ahead and cannot yet be written.

The public has made enormous progress. How provincial and ignorant our press showed itself to be of all larger European problems at the outbreak of the war, and how it has advanced by leaps and bounds in this direction, so that we are now discussing a league of nations almost as intelligently as the states in the old days of the Revolution discussed their own union under our constitution. In this country, which might well be renamed "New Europe" for our population comes from every country there, we can never have true patriotism until we develop the interests of every newcomer in his own native land and do not suppress it but aim toward a comsummate synthesis of all these nationalities, which shall be true Americanism.

V. As to *vocational guidance* and training, and technology we have of late made remarkable progress. England, as everyone knows, proposes four years of required continuation schools, and France, although she has so far made less definite provisions, is certain to follow suit; while Germany, as Friedel has shown, has gone still farther. It is obvious that our young people should be given the means of earning a livelihood for their own good as well as for the advancement of the country's industries. The Corporation School movement is already deserving of very special attention, and its new methods of efficiency will surely make themselves felt in the public schools. So many new departures in this country have already placed the schools in such contact with the life of the community, which is more and more flowing through them, that in recent years I have advised my graduate students of Education who, when they are through, want to take a year of travel and observation, to go not to Europe

but through this country. I make an itinerary for them of places in the United States to visit New York, Vineland, Chicago, Tuskegee, Gary, Cincinnati, Los Angeles and a couple of dozen more. We all know the Munich system of more than two score of apprentice schools in which every boy in as many trades must spend certain hours each week, without reduction of salary, in perfecting his knowledge and skill in his trade, and we shall eventually have many more. Even here the culture element should not be excluded, and the best professional spirit that Sloyd and the Arts and Crafts have transmitted to us, the latter straight from the old guilds of the Middle Ages, should be very carefully conserved. Each vocation rightly interpreted opens up a vista into the social and cultural world, and can be given an almost professional dignity. Our industrial system, of course, needs no end of transformation, and can perfect itself only when the old antagonisms between capital and labor are removed, and Heaven knows what the new democracy, so easily infected by vicious bolshevism, will lead us to in these directions. But here economists and publicists are giving us new visions, some of which will doubtless become practical. Each business needs, and some are beginning to acquire, a new morale of its own.

VI. *Literature* must take precedence over language study and philology. We must read more in both the ancient and modern texts, even if we introduce the use of ponies or translations, and have more reference to content than form, because with the former given the latter comes best as a by-product. The dominance of grammar and of notes must abate, and if we study classics we must use every possible means of entering into the spirit of the ancient Greeks and Latins and make their life live again in us, with a far more copious use than hitherto of charts, maps, diagrams, and illustrative apparatus in which, as our museum shows, our classical teachers are far behind those of Europe.

It may be well to remind ourselves here that Latin, in the age when it was getting its hold upon our educational system, was as practical as farming or engineering. It was the literary language of Europe. All the knowledge accessible or which was to reach the learned everywhere was in this language. The professional education it taught was to fit for the Church, of which the school was the servant. It was because it was so strictly, so severely, and so long a vocational study that it acquired its hold, which has persisted even to the present, and indeed it is still vocational for it is taken essentially by those who wish to teach it or who

will need to use it in scientific nomenclature. It is an inveterate trend of the mind that in proportion as a subject becomes useless we tend to prate of its culture value; but this is a false cry, for nothing has the slightest culture value that is not useful.

The method of teaching modern languages must be freed from that in vogue in the classics. The rate at which our soldiers "over there" have picked up French suggests how much more we might do. We must not yield to the chauvinistic jingo cry of dropping German, which is going to be just as necessary and probably even more so in the future than it has been in the past. Throughout the war the German pedagogues have insisted that not only French but English must be studied there as never before. They are right, and we should not be behind them in this respect. The war has brought this country into far closer and more vital relations, not only with our allies but with our enemies, than ever before, and Spanish, too, is coming to have a new value. Many experiments have shown how vastly more rapid progress can be in a living foreign language if interest is centered upon the subject matter, and how much faster sentence structure and vocabulary are mastered if attention is chiefly focussed on content.

VII. As this is the psychological moment for ideals, let me add another. One of the boasted achievements of this country was the secularization of schools. It was hit upon at a time when there were several score of religious denominations that could not agree, and it was a master stroke in this olden time. But now it is time to remember that *religion* itself created schools and also that the very root of the impulse to even science is religious, for "it seeks to think God's thoughts after Him." Every great specialist who has made a vital contribution to the sum of human knowledge has the awe of the astronomer who feels that he is in the presence of a power and wisdom vastly beyond his own; this sense is the very tap root of all religion.

On the other hand, even if the records of religion were all myth they lie more closely about the heart of childhood than anything else, and now when this great war has not only brought all sects together in a common cause but has given the world a tremendous impulse to here again go back to first principles and reevolve religion from its true sources, viz.: the moral virtues of loyalty, companionship, devotion of the individual even to death to the greater cause for mankind, why should the school persist in holding itself aloof from these great moral forces which have been such a re-

inspiration of the warring nations, in armies and at home? We have, then, in France particularly a strange spectacle of a country-wide secular revival of religion, hardly less than a reconversion of the nation to its old faith, spiritualized and purged of the dross of doctrine and form. Here, if I am not mistaken, there is a loud call to those charged with the initiation of youth to life to refind the old or make new ways of arousing and utilizing the ineradicable instincts of youth to feel not only humanity, but to get in closer touch with the spirit of the universe itself that underlies all religion, as well as all science and all that is really great in art and literature. This demand is larger than that which has prompted the various efforts to introduce those parts of the Scriptures on which Jews, Catholics, and Protestants could agree; it is larger than the European attempts to set apart certain hours each week when the youth of all these creeds should be placed under the guidance of their spiritual advisers, and it would seem as though a commission of those representatives of all the great sects that have the new vision might work out a channel for these spiritual forces that are striving now for reincarnation. This is not the time or place for details here, but I do want to register my own deep conviction that something new and very great is here possible.

We have been analytic but a synthetic age impends. Patriotism when in tents always has a theocratic trend, and there is a real religion of the trenches rudely camouflaged, as it always is, which must be recognized and developed. Psychology, too, is finding new and strange points of *rapport* between sin and regeneration; God and humanity; immortality and eugenics; prayer and the Freudian wish or the Adlerian *geltungstrieb;* the changes of adolescence and conversion or confirmation; the Holy Spirit and ecstasy or second breath; the Johannean love and sublimated eroticism; Heaven and Hell and the Kantian sense of justice that makes man feel that sin and suffering, and also virtue and happiness ought to get together and ultimately will do so; confession and psychoanalysis; and many more new correlates, which make science and religion henceforth, as Webster in his peroration said liberty and union should be, "inseparable now and forever." But this is too large a theme to discuss here.

I have touched in the most superficial way only these few points in order to illustrate my sense of the vast new responsibilities placed upon education to-day. It is our system of education from the kindergarten to the university that ought to be the chief heir of the results of the war. Upon it also is laid the burden of establishing in the hearts of

man a new world order. It is not a task of a day but of many years of arduous and concerted work. Many of the old issues will slowly fade as new problems take the center of the stage. In this era the main thing is to have in mind not primarily the mechanism of the organization, the perfection of a system which if too perfect may bring a sense of finality and achievement that is fatal, but to keep everything plastic, to recognize that educational values are everywhere supreme, that the worth of every human institution depends ultimately upon how far it fits the nature and meets the needs of mankind. For us teachers our "pillar of cloud by day and of fire by night" should be the nature and needs and possibilities of childhood, and the value of all topics and methods alike is what they contribute to bring the rising generations to an ever higher and more perfect maturity.

We educators are called on by the very successes of our arms to do for this country a work such as that which Fichte did more than a century ago in the day of his country's humiliation. It is a time when even our experts need a larger orientation, when the sense of our limitations weighs most heavily upon us and the need of widening our *apercus* into great highways is imperative. We ought to be *the* educational nation of the world as we have become the new leaders of its democratization. The psychological pedagogue must be an engineer in the domain of human nature. A new and bloodless but yet greater war against ignorance and the evils following in its train is opening, and we educators must not be slackers in taking up our spiritual weapons and going forth to this great spiritual war.

BOOK REVIEWS

Psychological Tests. Revised and Classified Bibliography. By DAVID MITCHELL and GEORGIE J. RUGER. Bureau of Educational Experiments, 16 West 8th St., New York City, 1918, Bulletin 9. 116 p.

This excellent bibliography places us under renewed indebtedness to the Bureau of Educational Experiments. It contains 1,428 titles, and is, so far as the reviewer is aware, the best list of books on psychological tests that has been published. The titles are classified under such rubrics as Theoretical, Methodology, Individual Scales, Individual Tests, Statistical Methods, Group Tests, Results of Application with Children, Adults, Feebleminded, Psychopathic, and Delinquents, etc. The work is so admirably done that the reviewer is reluctant to criticize, but to him personally the bibliography would be much more convenient if all of the titles were given alphabetically by author in one list and then a subject index given referring by number to the different titles on different topics. W. H. B.

Bureau of Educational Experiments Bulletins. New York, 1917 and 1918.

No. I. *Playthings.*
No. II. *A Study of Animal Families in Schools.* By LAURA B. GARRETT.
No. III. *Experimental Schools: The Play School.* By CAROLINE PRATT.
No. IV. *Experimental Schools: The Children's School, Teacher's College Playground, The Gregory School.*
No. V. *Experimental Schools: The Stony Ford School, The Home School of Sparkill, N. Y.*
No. VII. *Camp Liberty: A Farm Cadet Experiment.*
No. IX. *Psychological Tests: Revised and Classified Bibliography.* By DAVID MITCHELL and GEORGIE J. RUGER.

This set of bulletins reviews some of the experiments in educational methods conducted under the auspices of the Bureau of Educational Experiments. The first,—Playthings,—emphasizes the value of the spontaneous play of the child as a means of creative expression. Real toys are defined as those with which the child can indulge its constructive instinct, and the finished, mechanical products which we thrust upon our children are unsparingly condemned. "If children are let alone with play materials," the bulletin pointedly remarks, "if, for instance, they are left with paper and crayons, they will learn to use playthings very quickly and effectively. Left to dig out the 'soul' of an object for himself, and to transfer this soul to paper, which is, after all, the true province of art, a child under six may produce something that at first sight seems to our hide-bound imaginations grotesque. But he has drawn the essential rather than the object itself. Take the small boy of six who drew aeroplanes, guns, ships, and then smudged the whole thing with red crayon. When asked what the drawing represented, he said, 'Why that's war. Isn't it a mess?'"

Caroline Pratt's play school (*Bulletin No. III*) represents the attempt to utilize the child's constructive impulses and creative imagina-

tion in education. In their activities, the pupils of this happy little school not only use the materials provided specifically for play purposes, but in the course of their dramatic activities, turn the furnishings of the room into stage scenery, etc. Besides encouraging the children to work out in their play the social and economic problems which will face them on a larger scale in later life, Miss Pratt thus tries to develop the artistic spirit of the children in her care. "There are possibilities of an art life in every individual," she remarks. "The failure to develop an art impulse in education is partly due to the non-recognition of the fact that the free play of children *is* art. As the children play with drawing materials, with plasticine, with blocks and toys, with words, with dramatics, the emotions are freed and in a primitive way art is produced. The emotional processes in the children's play are identical with the processes we call art in adult life, and which, with an acquired technique, give us art porduction." Perhaps Miss Pratt is not fully aware of the significance of her work from the psychological standpoint, but it suggests that she is performing an incalculable service to the child in this establishment of the artistic habit, since she is thus making easy the neural pathways for sublimation of the emotional nature which is so necessary for a normal adolescent and adult life.

In Teachers College Playground (*Bulletin No. IV*), the play of the child is used as a socializing agent. Equipped with very little material, the children sought and made their own playthings, partly through manual labor but still more through the magic gift of make-believe. The result is a community where each child has a wooden box "house," and where presidential elections are held and laws are made. There is even a newspaper, edited by a precocious six-year-old boy, who typewrites the sheet at home, and brings it to the playground. It contains news contributed by the other members of this play city.

The Children's School and the Gregory School, described in the same bulletin, are further attempts to bring out the social side of life for the children. The plan of the former is based on a sound knowledge of psycho-analysis, as its founder frankly states, and attempts to have the child express his emotional nature in channels of social productivity, principally through the play activities which border on the artistic. The viewpoint which this educational experiment embodies is thus expressed: "This is the function of all art: self-expression in forms that are of social and communicable value. . . . All work must serve as a channel whereby the individual's life energy may flow undiminished into the life of the group."

The Home School (*Bulletin No. V*) is also an application of psychological methods to the problem of educating and remolding the child so as to develop a normal and harmonious personality as free as may be from mental conflicts. It caters especially to the only child, the nervous child, the over-imaginative type, etc. Its basic plan is "to restore the beneficial activities and responsibilities of the big families of the past generation, with the elimination of all the disadvantages." The child is studied psychologically, and is guided into proper channels of self-expression and of contribution to the social group.

The Stony Ford School of Mr. and Mrs. Hutchinson, discussed in the same bulletin, is a socialistic enterprise, and desires to combine the maximum of personal liberty with the ideal of a cooperative community. The founders say of their work: "We are both socialists, and regard the school as one of the many elements in society which are working to abolish our present economic and social system and to set up a more humane one in its place. For this purpose, and for

human happiness in general, it is necessary to have persons who can think for themselves and play their part in society. On this principle we work, but we do not necessarily teach socialism. We want every child to work out for itself, as it matures, its own solutions of the problems of life. The children have no religious instruction. Their ethical philosophy they work out for themselves through their experience in the little community in which they live, and we try to lead them to apply these principles to the larger life into which they will go."

The other bulletins, while of great practical value, do not represent such radical departures in educational methods as these half dozen school experiments. The Bureau of Educational Experiments is doing a much needed and invaluable work in financing and backing with its prestige these new pedagogical ventures, and it is to be hoped that its findings will not be too greatly delayed in receiving an universal application to the school system. PHYLLIS BLANCHARD.

Creative Impulse in Industry. By HELEN MAROT. New York, E. P. Dutton & Co., 1918. 146 p.

Miss Marot's study of the industrial situation has led her to believe that the fundamental mistake in the economic organization of modern society is the failure to recognize the importance of the *creative potentiality* of the workers as a factor in production. Hence the universal conception that work is something which people endure solely for the sake of being "paid off," an ideal which is held in common by the capitalists and their employees, so that "the whole industrial arrangement is carried on without the force of productive intention; it is carried forward against a disinclination to produce." "It is obvious that the disintegrating tendency in our system is due to the fact that production is dependent for its motive force on the desire to possess." How to prevent this tendency toward disintegration, and to effect a social transformation which shall utilize the creative impulse in place of the possessive instincts, is the problem with which Miss Marot is called upon to deal.

So far, neither America, with its enthusiasm for scientific management, nor Germany, with its state policy of industrial education, has properly understood the real crux of the industrial situation. As a result, instead of attempting to reorganize manufacturing so as to bring the creative impulse of the workers into play, they have taken more obvious but less adequate methods of readjustment. In the American business plants elaborate schemes have been evolved which tend to speed up the productive processes by offering wage rewards, to prevent change of labor by profit-sharing, etc. The German plan of meeting the labor problem is entirely different, and is worked out through the educational system. In the elementary schools, the children are all classified at the age of ten, and allotted to industry or professional life. At fourteen, the specific trade or profession for which the child is to be fitted is decided upon, and no individual rebellion can change this decision. Like the present American solution of scientific management, it fails in proportion as it makes no allowance for the development of personal initiative on the part of the laborers.

Since capital and labor have so signally failed to solve their difficulties, it becomes the business of the educator to enter into this field. In this age of machinery it must be realized that the creative energy for which we must find an opportunity if we are to reorganize labor conditions from within rather than from without, must be utilized in a cooperative fashion, because the whole economic system depends on

the intricate association of individuals in the process of production of goods. As a concrete illustration of the means by which we can hope to accomplish this purpose, Miss Marot discusses, in detail, Caroline Pratt's experiment with a workshop and school centered around the manufacture of playthings. The reason for this minute description of the new educational experiment is that in it Miss Marot sees embodied the principles which industrial managers can readily and efficiently apply to other lines of manufacture.

The Toy Shop will employ a working staff of 40 young people between the ages of 14 and 17, who have left school with the intention of going to work. In this educational industry, they will be required to spend part of their time in school, where they will devote their study to problems intimately connected with their work, as the organization of the industry into departments, the keeping of accounts, plans for building and equipment, the economics of the enterprise, and the relation between service and art in goods. In the course of this instruction the children will perceive that they are allowed to assume greater responsibilities in the workshop as they have become fitted for them, and, when they go out into the real industrial world, they will carry over into business the same attitude toward managers and production that they have learned to hold toward their teachers and the making of toys.

Since the Toy Shop is conducted on a strictly self-supporting basis, it is quite feasible to extend its principles to other trades and to bridge the first few working years of the child's entrance into industry in this manner. By this extension of education we shall vitalize the mechanical association of workers which has been brought about by increasing division of labor, and make each individual feel himself an integral part of the whole organization. In so far as the employee can see the entire bsuiness enterprise in all its ramifications, and can thus be permitted to enter into its management as well as into the sharing of material profits, the creative impulse is released, and the association necessitated by modern machine methods of production becomes spiritual as well as physical.

Miss Marot's book has well been characterized as a new departure in education for vocations, for it is all of that. If, in addition, it points the way to a lasting solution of the difficulties between capital and labor, as its author believes it may, it is also to be considered a real and lasting contribution to social reconstruction.

PHYLLIS BLANCHARD.

NOTES ON FRENCH WAR BOOKS.

Nos petits pendant la guerre et nos grands. By DAUTRIN ELIE. Paris, Plon, 1916. 156 p.

In this book the author shows that the French children have faced with great courage the strain of the war. It is a result, he says, of the development of physical culture in France before the war and also of the day-school system. He frankly condemns the boarding school system. Dautrin shows us some types of French children and soldiers in their special environment. For instance, "Nos petits à la mer," the "boy-scout," and "le soldat dans les tranchees."

La guerre et la vie de demain. Bibliothèque d'histoire contemporaine. Plon, 1916. 156 p

Mr. Alcan published under this title a series of lectures given at the "Alliance d'hygiène sociale." They are all studies of well-known French scholars and authorities on the most important and up-to-date problems of reconstruction.

The first volume, particularly interesting from the pedagogical point of view, deals with all that concerns childhood. The second is entitled "Les risques immédiate de la guerre et lem répartition." The contents of the volumes are as follow:

Volume I

Boutroux Émile. La guerre et la vie de demain. War is destruction, but it may produce good consequences. It gives the nation "a new lease of life and fecondity." France will keep her own ideals but will adopt many new methods to attain them.

Prof. Chauffard. La Guerre et la santé de la race. Medical observations made during the war are particularly encouraging. The nervous reaction of the nation following the formidable shock proves its power of resistance. The rôle of the medical science of tomorrow will be to strengthen more and more the power of the race.

Mrs. G. Siegfried. La guerre et le rôle de la femme. Mrs. Siegfried, after recalling the position of the woman in 1870, shows that today she plays a far more universal and efficient role. More educated and more united French women give to the country the best of their efforts.

Prof. Pinard. La guerre et la défense de l'enfant. Prof. Pinard presents to the public the "office central d'assistance maternelle et infantile." "To protect the child while protecting the mother" is the principle of this institution which, well organized, promises to render the most valuable services to the country.

Mlle. B. Milliard. La guerre et la tutelle des orphelius. Miss Milliard gives us an idea of the conditions before the war of the morally and materially abandoned minors. The death of many fathers multiplies these dependents and it is necessary that well-made laws should give some protection to these children.

Dr. Mosny. La guerre et l'hygiène scolaire. Dr. Mosny speaks in favor of integral, physical and intellectual education. He lays great stress on physical culture. School curriculums of today are not fit to answer the needs of such an education and should be modified.

Montjotin. La guerre et l'enseignement primaire. While refuting some charges brought against primary education, Mr. Montjotin ad-

mits the necessity of ameliorations. A greater importance should be given to physical culture; also a better orientation of professional apprenticeship. Primary education should become more and more a vital element for the country.

Cohendy. La guerre et l'apprentissage. The question of apprenticeship becomes more and more a social problem of great importance. How to fill the gaps made by the war? The practice of a profession is not sufficient; it needs a special training in a professional school. This should be made compulsory.

Belot, Gustave. La guerre et l'enseignement secondaire. Many charges have been brought against the secondary school system. Mr. Belot thinks that the government should establish free education in the Lycée, so that the accusation that the government draws social lines could no longer be maintained. Contrary to current opinion, the author believes that secondary education should be conducted along the lines of general culture rather than exclusively along technical and vocational lines.

Liard, Louis. La guerre et le suniversités françaises. Mr. Liard warns the student not to compare "Science" and "Kultur." There is a distinction. France has always been the country of real science. The author takes the opportunity to enumerate a great number of French scholars. More than ever is it necessary today to coordinate the work of higher institutions of learning if they are to keep their reputation. Regarding the methods, Mr. Liard gives some very interesting suggestions. He hopes that foreign students will come to the French universities and that the "scientific mecqua shall no more be Germany, but France."

Volume II

Dr. Doisy. Les nécessités de l'hygiène dans les lieus de combat et d'occupation. Doisy calls the attention of the public to the urgent necessity of taking measures in order to save the health of many refugees returning to their devastated homes. The danger comes from the decomposing bodies, the spread of microbes and the inadequate accommodation of houses partially destroyed by bombardments.

Dr. Bourrillon. La guerre et la rééducation des mutilés. Dr. Bourrillon insists on the necessity of helping the disabled soldiers by giving them a salary instead of alms. It is dangerous to encourage idleness among the heroes of the war. Let us give them back their dignity of independence in fitting them to earn their living by suitable employment.

Brissac, G. La guerre et l'assistance aux blessés de la tuberculose. Every day brings up new cases of tuberculosis. We must prevent the discharged soldiers from spreading the disease among the civilian population. Mr. Brissae tells of the efforts that have been made in that direction. The soldiers suffering from tuberculosis should be kept in sanatoriums until it is safe to return them to their homes. Back in civil life, the sick will still be guided and advised by "hygiene advisors."

Fontaine, A. La guerre et la question du chômage et du placement. The declaration of war, while taking many workmen away from their tasks, has brought to a standstill many industries. Mr. Fontaine shows clearly the methods that are followed and the measures that are taken to fight the suspension of work. The war has given a new impetus to this kind of aid.

Picquenard, C. La guerre et la question des salaries. The war has produced a great change in the question of remuneration for work.

In some industries wages have been lowered, to rise up progressively again; while others are much higher than they were before the war. Mr. Picquinard explains some of these stupendous statistics. He thinks that in the coming days the working people will be better paid than they were before the war. The employers will have to accept the situation, but they will demand more production and improved methods from the workman.

Gide, Ch. La guerre et l'organisation nationale de l'alimentation. After explaining the working of the law of supply and demand, Mr. Gide offers a remedy for its many imperfections as shown during the war. He criticizes successively the rationing, the taxation and the system of municipal stores, and recommends the organization of co-operative societies.

Larnande, F. La guerre et la reparation des dommages. This reparation must be a right and not a charity. But this right is difficult to establish. Mr. Carnande explains these difficulties. He shows the complexity of the problems and the work to be done by the legislators.

Risler, G. La guerre et l'habitation de demain. The destroyed villages and cities will have to be rebuilded in a different way from what they were before the war. The principles of hygiene must be observed. Mr. Risler shows the great influence bad living conditions exert upon the population, and recalls the splendid results of the system of low rents. The time has now come to apply modern principles of domestic sanitation.

Magne, M. La guerre et la reconstruction des trésors artistiques de la France. Mr. Magne does not think that we ought to leave as they are the ruins caused by the war. He considers it a duty to restore them. It will be a difficult task. But the great monuments of France have always depicted the great deeds of history. We must not copy what existed before. The restored monuments will tell the story of the years we have lived through.

Faure, F. La guerre et les ressources de la France. Mr. Faure compares and comments statistics. He reaches very encouraging conclusions regarding the material resources of France. Shortage of money will not stop the war, but the author recommends saving and, above all, to avoid buying in foreign countries what can be bought in France.

MAURICE PIETERS.

BOOK NOTES

Projects in the Primary Grades. By ALICE M. KRACKOWIZER. Philadelphia, J. B. Lippincott Co., 1919. (Lippincott's School Project Series, Edited by W. F. Russell, Ph.D.) 221 p.

This book is designed for normal-school pupils, reading circles, and as an aid for teachers in the kindergarten and the primary grades. It gives plans and outlines for series of lessons that cover many days of work. The author discusses purposeful and constructive activities, ethical aspects, Nature experience, literature, and formal subjects and purposeful activities. The book is illustrated by a dozen cuts, and is printed in very clear type. The point of it is that children's activities should have a definite practical end, that they should make things of real use.

La Vie Universitaire à Paris. Ouvrage publié sous les auspices du Conseil de l'Université of Paris. Paris, Armand Colin, 1918. 223 p.

This book is distributed by the Council of the University of Paris, under whose auspices it was prepared, and is intended to set forth the opportunities for advanced study in that University. It is a timely book in that many American graduates will soon be considering where best they can continue their studies abroad, now that Germany is *persona non grata*. There are many illustrations in the book, including photographs of distinguished professors of the past and present, various views of the University buildings, libraries, etc. The appeal is far too much to the glories of the past and too little to the opportunities of the present.

Housewifery. By L. RAY BALDERSTON. Philadelphia, J. B. Lippincott Co., 1919. 353 p.

This book seeks to show women how to save time, money, and energy in their home. It is addressed to the many women who do their own work or supervise household employees. It is the product of much experience, and treats of plumbing, heating, lighting, labor-saving devices, household supplies, furnishings, the care of books, clothing, cleansing and renovation, disinfection and household pests. The book is copiously illustrated.

American Red Cross Text-Book on First Aid. A Manual of Instruction. By Colonel CHARLES LYNCH, U. S. A. Philadelphia, P. Blakiston's Son and Co. (c. 1918). 209 p.

This volume discusses the structure of the body; microorganisms; bandages, wound dressings, stimulants, emetics; general directions for first-aid to the sick; bruises, sprains, dislocations, fractures; injuries due to heat and cold; electric shock; gas poisoning; unconsciousness; and a series of common ailments from colds to corns. We are then told of exercises and outdoor sports, how to carry the injured, and there is a final chapter upon war first-aid.

Another volume on *Home Hygiene and Care of the Sick*, by Jane A. Delano, treats of the causes and prevention of sickness, health and the home, the sick room, bathing, common ailments and remedies, and many other topics.

The Dawn of Mind. By MARGARET DRUMMOND. New York, Longmans, Green and Company. 179 p.

Child psychology, we are told, should bulk more largely in our thought and literature than it does. Many problems of general psychology can be best observed in the developing mind. Records of the mental growth of individual children are recommended, and we are told that competent mothers are rapidly now increasing.

The chapters are: The Physical Basis; Early Consciousness: Absorption and Expression; Some Fundamental Concepts, The Unlucky Baby; Memory, Imagination and Play; Sympathy, Suggestibility, and Self-Control; Reasoning; Language. The book is simple and elemental, and it is evident that the author has only a very limited acquaintance with the literature on the general topic or the special themes that are treated. It is rather a "goody" book and deals mainly with the obvious.

The Psychology of Childhood and Youth. By EARL BARNES. New York, B. W. Huebsch, 1914. 68 p.

The author was a pioneer in child study and has been giving popular lectures on the subject for a quarter of a century. This book contains outlines, of less than two pages each, of thirty of these lectures, with references at the end of each. The lectures outlined are: What a Child May Inherit, The Life of Early Infancy, Laws of Physical Development, Feelings and Emotions in Childhood, Sense Development in Children, How Children Think, Physically and Mentally Defective Children, Growth of Language, Mental Images and Imagination, Imitation and Suggestion, Habits and Instincts, Memory in Childhood, The Growth of Personality, Children's Sense of Time, The Sense of Law, Superstitions of Childhood, Growth of Reasoning Processes, Growth of Social Understanding, Leadership, Development of the Moral Nature, Criminal Tendencies in Children, Attitude of Children Toward Punishment, Prizes and Rewards, Development of the Aesthetic Nature, Religious Development in Childhood, Play in Childhood, Children's Attitude Toward Work, Children's Attitude Toward Property, Attitude of Children Toward Political Life, and Children's Sex Interests.

Applied Eugenics. By PAUL POPENOE and ROSWELL HILL JOHNSON. New York, The MacMillan Co., 1918. 459 p.

Eugenics, we are told, consists of a foundation of biology and a superstructure of sociology. These two parts its founder, Galton, recognized, but until recently sociologists have been indifferent to eugenics with the result that the science has been left to biologists, who have neglected the superstructure. The latter aspect has been stressed in this book, which lays special emphasis on the practical means by which society may encourage the reproduction of superior persons and discourage that of inferiors.

The more important chapters are the following: Modification of the Germ-Plasm, Differences Among Men, The Inheritance of Mental Capacities, Origin and Growth of the Eugenics Movement, Desirability of Restrictive Eugenics, The Dysgenic Classes, The Improvement of Sexual Selection, Increasing the Marriage Rate of the Superior, The Color Line, Immigration, War, Genealogy and Eugenics, and finally The Eugenic Aspect of Some Specific Reforms like taxation, child labor, vocational guidance, minimum wage, mother's pensions, housing, feminism, sex hygiene, trades unionism, prohibition, and pedagogical celibacy.